JANUARY 5, 1959

PAPER TRADE JOURNAL

Marathon's Diversified Alabama Mill Described with Words and Pictures

World Pulp and Paper Capacity Expansion to Continue

Diamond Gardner Red Bluff Mill First to Make G'wood from Softwood Chips

Pulp and Paper Machinery Industry Outlook for '59 and Review of '58

MOORE & WHITE
DUPLEX BOARD CUTTER
and Air-Controlled
DUPLEX SLITTER

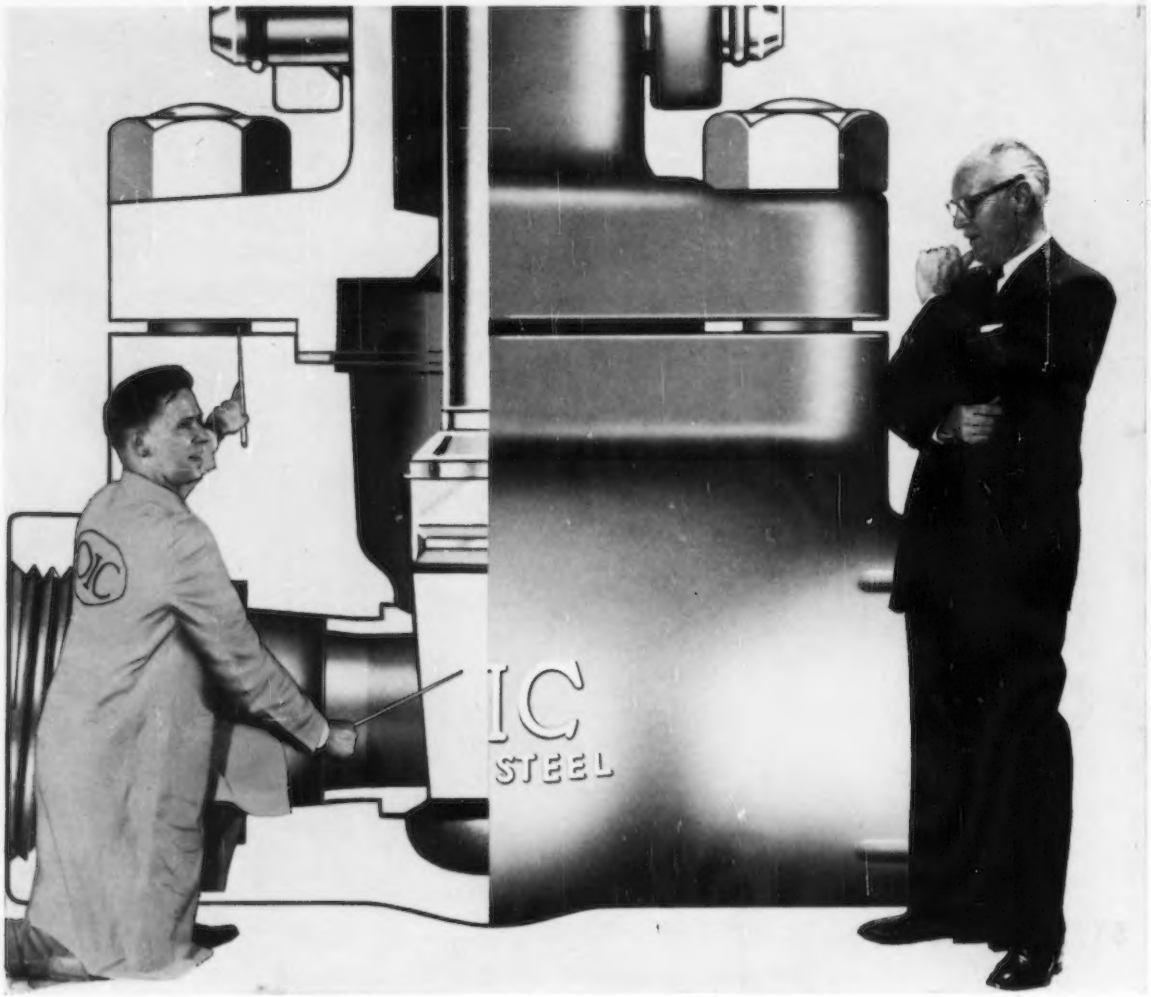
Rugged Construction for 'round the clock operation . . . On the Machine

The DUPLEX CUTTER can be adjusted while in operation for changes in lengths. A special feature also permits adjustment of draw between sections, assuring accurate cutting even when varying sheet conditions occur.
The DUPLEX SLITTER is designed particularly for use with the M. & W. Duplex Cutter but will also give excellent results with any other cutter. Changes in widths can be made in seconds while machine is in operation.

The MOORE & WHITE Company
330 East Hunting Park Avenue, Philadelphia 24, Pa. GArfield 6-9439
West Coast: Stephen Thurlow Co., 310 Walker St., South, Seattle 4, Wash.

University Microfilms
Att: E B Power
313 N First St.
Ann Arbor, Mich.

...and you can see here....and here, sir, how we've killed maintenance problems on our new forged steel lines.



We stop galling and erosion by giving you 13% chrome stainless steel trim with wedges *duracased* to a rugged *1000 Brinell hardness.*

The square and *bolted* body-bonnet joint makes it easy to service the valve quicker. And it's a tighter joint, made doubly leakproof by recessing the soft iron gasket into the body. The gasket can't blow!

And you get the fastest joint make-up you've ever seen. Look at those pipe ends. See the extra wrench-gripping area and lugs. See how body-bonnet flanges are out of the wrench's way. No time lost here!

These new 600-lb. OIC forged steel valves are available with either *high-flow* ports (1300 line), or *standard-flow* ports (1100 line). Call your OIC Distributor, or write for specification literature.

The Ohio Injector Company • Wadsworth, Ohio

OIC VALVES

BRONZE, IRON, FORGED AND CAST STEEL, LUBRICATED PLUG VALVES

MAINTENANCE MECHANIC

CLERK

ENGINEER

MACHINE TENDER

WOOD YARD FOREMAN

"I want to be kept informed"

No matter what your job is, it's natural to want to know what's going on in your company in order to work most efficiently. Send us your ideas on why, when, how and of what you want to be kept informed.

"THE PAPERMAKER"

12th BOLTON AWARD

(Annual Essay Contest)

10 NATIONAL PRIZES

$1000 • $750 • $500 seven of **$200** each.

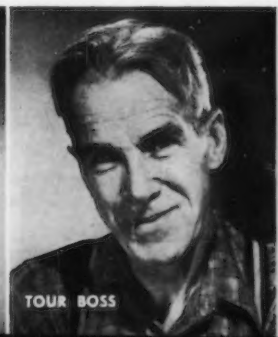
Co-Sponsored by **THE AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION**
Chicago, Illinois
and
JOHN W. BOLTON & SONS, INC.
Lawrence, Massachusetts

CONTEST RULES

1. The contest is open to all employees of pulp and paper mills in North America.
2. Your paper should be confined to 1500 words, typed with double spacing on one side only of plain sheets, 8½" x 11".
3. Place your name, the name and address of your mill, your position or duties and your home address on the cover sheet only. This information must not appear in the manuscript.
4. Mail your entry before midnight March 31, 1959 to: The Secretary and Treasurer, The American Pulp and Paper Mill Superintendents Association, 327 So. LaSalle Street, Chicago 4, Illinois.

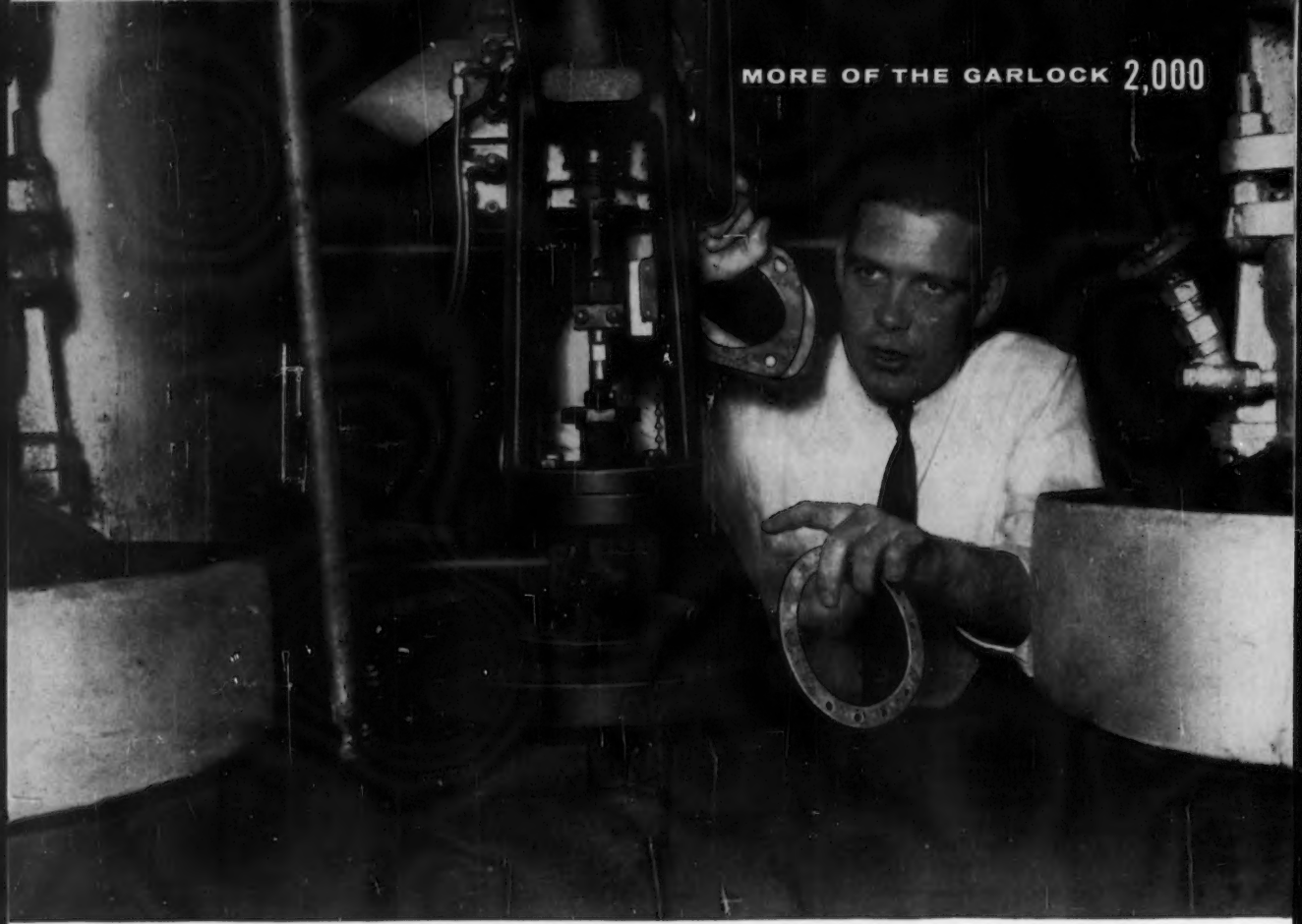
MILLWRIGHT

ADMINISTRATOR


TOUR BOSS

PAPER SORTER

SUPERINTENDENT



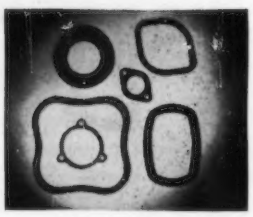
"If you're gasketing against steam or gases to 700°F., try GARLOCK 900"

Most engineers agree, that safe positive sealing of pipe flanges and gasketed joints on systems handling steam, gas, or air to 700° F. is best accomplished with a gasket material such as Garlock 900 which is resistant to plastic flow, but is compressible enough to compensate for surface irregularities. Garlock 900 is made from long fiber Canadian asbestos and a special rubber compound bonded under pressure and vulcanized into a homogeneous structure . . . compressible, yet resistant to plastic flow.

"...for hot oils use GARLOCK 7021"

Sealing against hot oils to 700° F. on pipe lines, internal combustion engines, compressors, or other high temperature applications calls for a strong dense gasketing such as Garlock 7021 . . . oil resistant, compressible, yet unusually resistant to plastic flow under heavy bolt loads.

"...for solvents to 300°F.—GARLOCK 7228"



This Compressed Asbestos and Neoprene Gasketing for gasketed joints and pumps, provides the desired compressibility necessary for safe gasketing on systems handling solvents or oils . . . without plastic flow under heavy bolt loads.

These high temperature gaskets are still another part of the Garlock 2,000 . . . two thousand different styles of packings, gaskets, and seals for every need. The only complete line. That's why you get unbiased recommendations from your Garlock representative. Call him or write for Gasket Folder AD 162.

THE GARLOCK PACKING COMPANY, Palmyra, N.Y.

For prompt service, contact one of our 30 sales offices and warehouses throughout the U.S. and Canada.

GARLOCK

Packings, Gaskets, Oil Seals, Mechanical Seals, Molded and Extruded Rubber, Plastic Products

Published every Monday by Lockwood Trade Journal Co., Inc.
49 West 45th Street, New York 36. Cable: Lockmin

PAPER TRADE JOURNAL

Week of JANUARY 5, 1959—*Vol. 143, No. 1*

TRENDS 11

NEWS OF THE WEEK 13

FEATURE ARTICLES

Pulp and Paper Machinery Industry Outlook for 1959 and Review of 1958 30

New Marathon Southern Mill Manufactures Wide Variety of Products 34

World Pulp and Paper Capacity Expansion to Continue 41

Diamond Gardner Reaches Toward 'Whole Log' Utilization 42

PAPER PEOPLE 15
NEWS OF CONVERTERS 16
NEW EQUIPMENT AND SUPPLIES 23
NEWS OF SUPPLIERS .. 27
PRICES 48
FIGURES OF THE WEEK 49
OBITUARIES 49
CLASSIFIED ADVERTISING 52
ADVERTISERS INDEX .. 58

JOHN C. W. EVANS
Editor

PAUL D. VAN DERVEER
Associate Editor

R. E. THUEMMES
Associate Editor

HARRY L. DYER
Assistant Editor

EBEN M. WHITCOMB
Editor-in-Europe

V. B. HAWKINS
Managing Editor

W. N. PERRY
Staff Artist

LOCKWOOD TRADE JOURNAL CO., INC.
GEORGE E. LOCKWOOD.....President and Treasurer
ARTHUR E. GORDON.....Vice President
FREDERICK E. WINKLER.....Secretary

Published by Lockwood Trade Journal Co., Inc., at 34 North Crystal St., East Stroudsburg, Pa. Second class postage paid at East Stroudsburg, Pa. Printed in U.S.A. Copyright 1959 by Lockwood Trade Journal Co., Inc. **Paper** established Feb. 17, 1899, combined with **Paper Trade Journal** Nov. 16, 1899. **Paper** established Sept. 21, 1910, combined with **Paper Trade Journal** February 19, 1926. All rights to the above titles reserved. Also publishers of **Lockwood's Annual Directory of the Paper and Allied Trades.**

REMEMBER THESE DATES

Jan. 28-30, 1959: Canadian Pulp and Paper Assn. Annual Meeting, Queen Elizabeth Hotel, Montreal

Feb. 23-26, 1959: Paper Week in New York

SUBSCRIPTIONS →

Paper & Pulp Mills, Converters and their Personnel	1 yr.	2 yrs.	3 yrs.
United States	$5.00	$8.00	$10.00
Canada and U. S. Possessions	7.00	11.00	14.00

All others than above, price per year:
U. S.: $7.50—Canada and U. S. Possessions: $10.00.

Latin American Countries	15.00	25.00	30.00
All Other Countries	20.00	30.00	40.00

Single copy price of current issues:
North America 50c Foreign $1.00

R. E. BOETSCH Director of Circulation

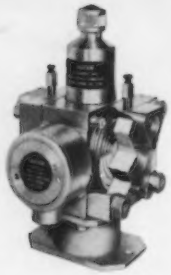
PAPER TRADE JOURNAL—49 W. 45th St., N.Y. 36, N.Y.
Please enter a subscription with the mailing address as follows:
Name .....
Address .....
City..... Zone.... State.....
If subscription is for an individual, please fill in:
Employer..... City..... State....
Position..... Employer's Business.....
Amount $ ..... ☐ Bill Me ☐ Bill Company ☐ Check Enclosed

Taylor Instrument Companies

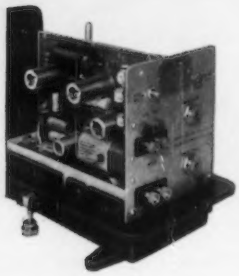
ELECTRONIC

with all the outstanding features of

INSTANTANEOUS SENSING AND TRANSMITTING UNITS

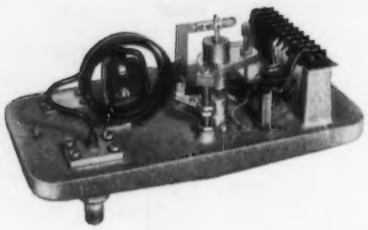


707T DP Transmitter. It provides direct conversion from differential pressure to an AC signal. No maintenance . . . insensitive to vibration . . . self-draining and venting . . . positive over-range protection to 1500 psi . . . no process fluid in contact with internal parts, double stainless diaphragm seal between process and electrical components . . . no stuffing box, no bending members, no pivots, no flexible diaphragms nor torque tube seals. No vacuum tubes, no transistors—only a simple differential transformer. Highly linear adjustable silicone damping. Perfect for all flow applications. External zero, with wide range of zero suppression. Designed for use in Class I, Group D, Division I areas.



700T Potentiometer Transmitter. Unsurpassed for sensing and transmitting Temperatures (either thermocouple or resistance elements), Load, Speed, pH, or other millivolt signals. Electronic balancing eliminates the need for slide wires, batteries, standard cells or moving parts. Continuous vernier adjustment of span or zero is simplest on the market.

Interchangeable plug-in service "cans" permit quick adaptation of one instrument for use with different primary elements. Amplifier plugs in for simple servicing. Infinite sensitivity to the input signal. Weatherproof case permits field mounting. Users consider it the finest potentiometer transmitter available.



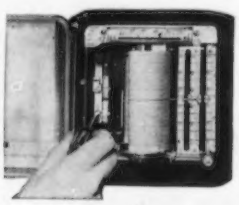
705T Pressure Transmitter. Bourdon tube senses pressure changes and moves the core of a differential transformer to change its electrical output. A simple, extremely dependable unit, built for many years of trouble-free service. Simple span and zero adjustments. Pressure ranges from absolute to 2000 psi.

• • •

See your Taylor Field Engineer for full details or write for Bulletin. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Ontario.

VALVE POSITIONER

A true electro-pneumatic valve positioner, permits full utilization of the superior performance of electronic control, coupled with the power and smooth throttling action of pneumatic diaphragm motors. Pneumatic high-capacity, leakless booster relay is easily accessible for maintenance without exposing the electrical system. Unmatched stability due to powerful balanced armature reduces susceptibility to shock and vibration to a minimum. Designed for Class I, Group D, Division I areas.



1. Front Adjustments and all the features of the famous 90J Transcope Pneumatic Recorder. With chart, pen and set-point side-by-side (as in Transcope Pneumatic Recording Controllers) all pertinent process information is immediately visualized. Hence operators make fewer mistakes. All available in one 6″ x 6″ cutout.

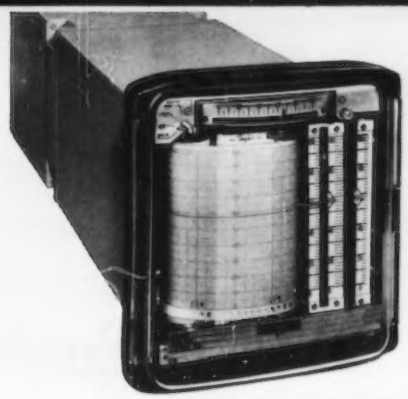
Taylor Instruments

sets new standards in

INSTRUMENTS

the highly successful TRANSCOPE* line!

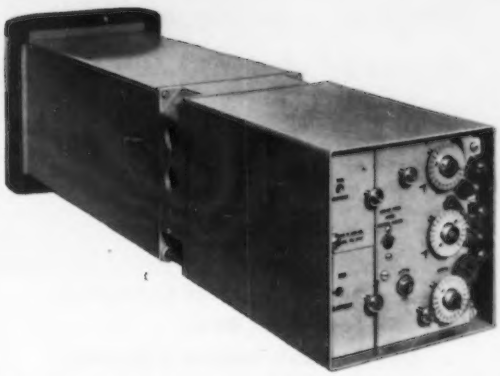
AC or DC RECORDER



Parallels electronically all the features of the TRANSCOPE Pneumatic Recorder that have won such wide acclaim. Positive, precise pen positioning provided by actual servo-motor, hundreds of times more powerful than meter type movement. Control settings and adjustments can be made from front or rear of case. Recorder can be removed without disturbing process control. Bumpless manual-to-automatic transfer is obtained without manual matching of set point and process. Plug-in Set Point Transmitter permits uninterrupted control.

All transistorized (solid state), the 701J Recorder is unaffected by ±10% line voltage variation; thus there is no need for an expensive constant voltage source. All principal assemblies and sub-assemblies are plug-in type for flexibility and easy accessibility.

AC or DC CONTROLLER

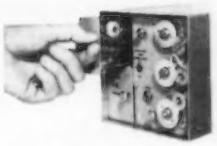


Embodies all the advantages of the most advanced control circuits. The unique diode limiter circuit permits even the two-response controllers to eliminate overpeaking on most applications. It is effective *at all times,* whether the variable is approaching control point from above or below; on changes in set point; following major process disturbances; or on start-up.

Interchangeable, plug-in assemblies permit conversion to either fast or standard reset and two-response or three-response controllers. Unparalleled rangeability makes this a universal controller. Unaffected by line voltage changes up to ±10%. Controller signal gives multiple valve operation. Output signal from 1-5 Ma feeds into any load from 0-10,000 Ohms. Plug-in assemblies: control responses, operational amplifier, AC/DC Converter, DC reference supply and controller.

2. Interchangeable Recorder Slide. Completely transistorized. Unaffected by a supply voltage change up to ±10%.

3. Powerful Servo Motor gives more precise pen positioning than ever before. More accurate records.



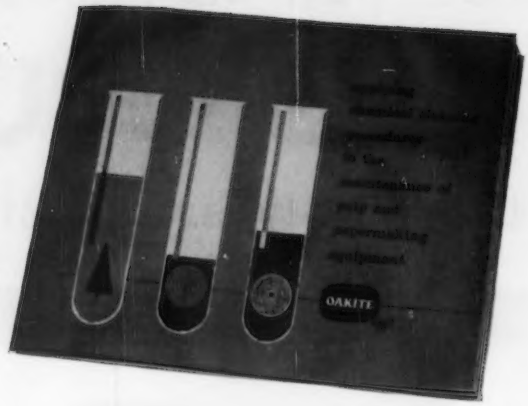
4. Plug-in Controller Sub-Assemblies. Printed circuit boards, mercury bottle disconnect switch.

5. Extremely Stable Controller Amplifier, utilizing latest design techniques and premium components.

*Reg. U.S. Pat. Off.

MEAN ACCURACY FIRST

NEW Oakite booklet shows how to cut cleaning costs!

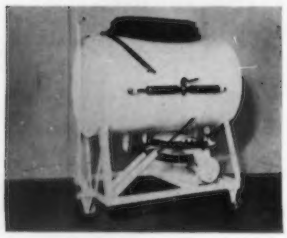


It's free... help yourself to dozens of cleaning tips on

- **Pulp Washers, Pulp Screens**
- **Liquor Heaters**
- **Multiple Effect Evaporators**
- **Felts, Drying Rolls**
- **White Water Systems**
- **Suction Press and Couch Rolls**
- **Fourdrinier Wires**
- **Beaters • Jordans • Save-Alls**

...and head box, filter beds, pumps, dandy rolls, vats—just about every piece of equipment used in the pulp and paper industry requiring maintenance cleaning. Shows how to save time and money with Oakite materials, methods and mechanized cleaning equipment.

This new booklet was put together the hard way ...by condensing the Oakite know-how gained from years of working with pulp and paper mills. It's yours the easy way...simply by requesting a copy. Ask your local Oakite Technical Service Representative, or write to Oakite Products, Inc., 68 Rector Street, New York 6, N. Y.



OAKITE HOT-SPRAY UNIT gives you self-contained, mobile 'mechanized cleaning'. Spraying about 2 gallons of cleaning solution per minute, it covers 12,000 sq. ft. in half an hour. Excellent for cleaning papermaking machines, stock preparation units, walls, floors.

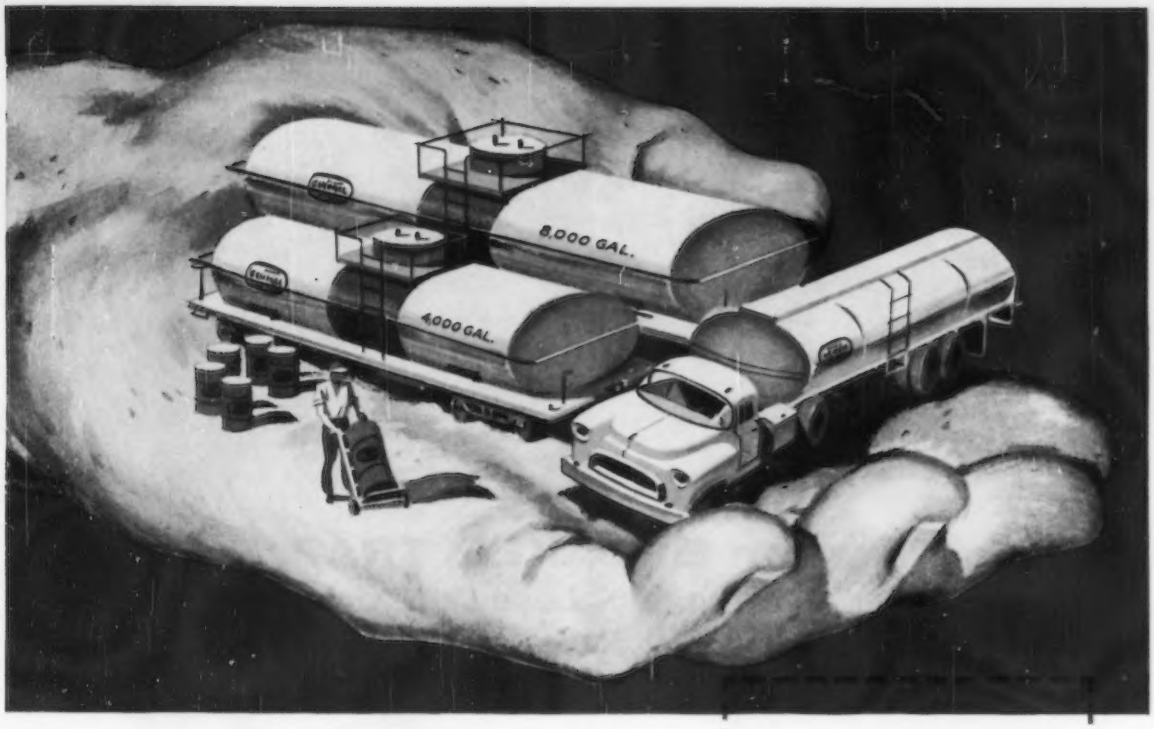
OAKITE SANISEPTOR is the simplest of mechanized cleaning units. Just fill with detergent and couple to any hot water outlet. Your water pressure works it—no pump, motor, coils or other equipment required. Portable to any point in the mill ... weighs only 25 lbs.

OAKITE "HURRICLEAN" steam-detergent gun is lightweight, cool handling, with swivel-action nozzle. Works off your plant steam supply. Does a marvelous job of power cleaning. Try handling one.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE®
MATERIALS · METHODS · SERVICE
SCIENCE

Export Division Cable Address: Oakite

Technical Service Representatives in Principal Cities of U. S. and Canada



TO MEET YOUR NEEDS . . .

GEN-FLO® OFFERS BOTH TOP QUALITY AND INDIVIDUALIZED SERVICE

To help you keep latex inventories within reasonable limits, Gen-Flo is available in shipments tailored to fit *your* production requirements. Whether your need is for drum, tank truck, or tank car quantities, Gen-Flo is ready to serve you now!

Gen-Flo, the "balance-controlled" styrene-butadiene latex, comes from an ultra-modern plant, where it is carefully produced and thoroughly tested by skilled technicians to assure the ultimate in quality and uniformity. Prove Gen-Flo's excellence in your own starch or casein paper-coating formulations—write today for literature and a generous sample of Gen-Flo . . . the latex that *makes* outstanding paper.

FACTS YOU SHOULD KNOW ABOUT GEN-FLO

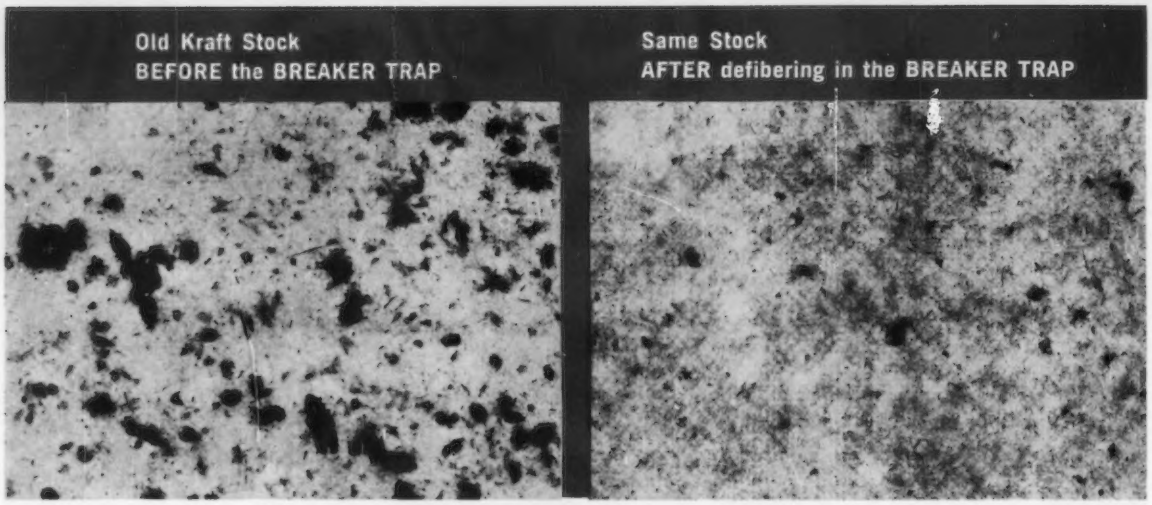
Tested by leading manufacturers, Gen-Flo has been found to offer these advantages for paper-coating applications:

- **Superior brightness**
- **Better pick resistance**
- **Higher ink receptivity**
- **Improved opacity**
- **Better smoothness and gloss**

THE GENERAL TIRE & RUBBER COMPANY
CHEMICAL DIVISION
AKRON, OHIO

Creating Progress Through Chemistry

Chemical Division GENERAL THE GENERAL TIRE & RUBBER CO. GEN-FLO®



Black-Clawson BREAKER TRAP...

Uses 55% Less Defibering Horsepower

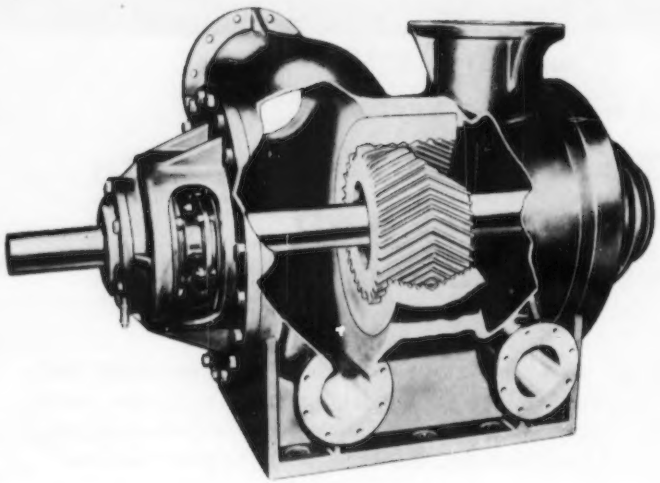
These hand sheets show the degree of selective defibering you can get with a Black-Clawson Breaker Trap installed after your pulper—and you can get it for *less than 2 hp per ton per day.*

Compared with the power needed to obtain the same degree of defibering in a conventional disc refiner, conical refiner or jordan, the Breaker Trap will do the job—*and save as much as 55% defibering horsepower.*

The Breaker Trap efficiently separates fibre bundles and disperses the stock. There is no bar-to-bar contact—usable fibres are salvaged and waste materials are left intact. Maximum screening efficiency for cleaner, higher yield is the result.

It is especially effective for defibering dirty waste papers, old kraft, .009", virgin pulps, de-ink stock, broke stock and has many applications in the pulp mill.

The power savings is substantial, the defibering is excellent, the cost is low. Available in 12" or 18" dia. rotor for either batch or continuous operation. Have your Shartle Division sales engineer show you other hand sheets and application data pertaining to the stock you're using. Or, write to Shartle for complete details on the Breaker Trap.



Long wearing stainless steel rotor and stator of Breaker Trap operates at fixed gap.

SHARTLE DIVISION STOCK PREPARATION EQUIPMENT

THE BLACK-CLAWSON COMPANY

SHARTLE DIVISION, MIDDLETOWN, OHIO

Executive Offices—250 Park Ave., New York, N. Y. • Pandia Division, Pulp Mill Equipment, Hamilton, Ohio • Paper Machine Division, Paper and Board Machines, Watertown, N. Y. Dilts Division, Converting Machinery, Fulton, N. Y. • Black-Clawson (Canada) Ltd., Canadian Sales & Manufacture, Montreal, P.Q. • Black-Clawson International Ltd., British-European Sales and Manufacture, London, England • District Sales Offices, Atlanta, Ga.; Downingtown, Pa.; Portland, Ore.; Appleton, Wis.; Hamilton, Ohio

In Canada: Black-Clawson (Canada) Ltd., 5460 Patricia Ave., Montreal 24

Trends

Paper and Board Rates in 1958

Paper and board mills in 1958 both operated at slightly better than 86% of capacity compared with 91 and 90% respectively in 1957. However during the latter half of 1958 both paper and board mills operated at close to the same rate as in the last six months of 1957 which means, that because of ensuing capacity increases, tonnage produced in the last half of 1958 was well ahead of the same period in the previous year.

Machinery Industry Review and Outlook

The pulp and paper machinery industry during 1958 operated at about 50% of capacity, according to an article on page 30. Only a slight improvement is anticipated during the first half of this year but this industry's production level is expected to rise in the latter half.

First Plant for G'wood from Softwood Chips

First regular commercial production of groundwood pulp from softwood chips is described in the feature article on Diamond Gardner's new Red Bluff, Calif. mill, starting on page 42. This process was first reported in detail in PAPER TRADE JOURNAL in 1955 and 1956. We subsequently reported on Diamond Gardner's pilot plant operation at Ogdensburg, N. Y. Now we present the details of the completely new plant for this process which we have hailed as being highly significant.

World Capacity Expansion Continuing

"Optimism for the future of the pulp and paper industry exists in many paper producing countries overseas, if reported plans can be taken as a guide" states Darwin De Golia, U. S. Dept. of Commerce, foreign trade specialist in a feature article in this current issue entitled "World Pulp and Paper Capacity Expansion to Continue".

Forecast of 1959 Paper and Board Output

Paper and board production of 33 million tons is forecast for 1959 by Dr. Louis T. Stevenson, economist with Tucker, Anthony & R. L. Day. This forecast by the former A.P.P.A. economist is 3% higher than the 32 million tons predicted by U. S. Department of Commerce as reported in our December 22nd issue. The editors have felt that the 32 million figure was too low and are glad to have this confirmation. Dr. Stevenson forecasts for 1959 by major classifications in thousands of tons as follows: Paper (excluding newsprint and building paper) 12,500 versus 11,800 for 1958 (an increase of 6%—Newsprint, 1,800 versus 1,700 in 1958 (an increase of 6%—Paperboard, 15,400 versus 14,400 last year (an increase of 7% and Building paper and board, 3,300 versus 3,000 in 1958 (an increase of 10%).

Vancide®

51 Z DISPERSION

FUNGICIDE and BACTERICIDE

very low order of toxicity

not a primary irritant

for use as a

SLIMICIDE

safe at recommended levels

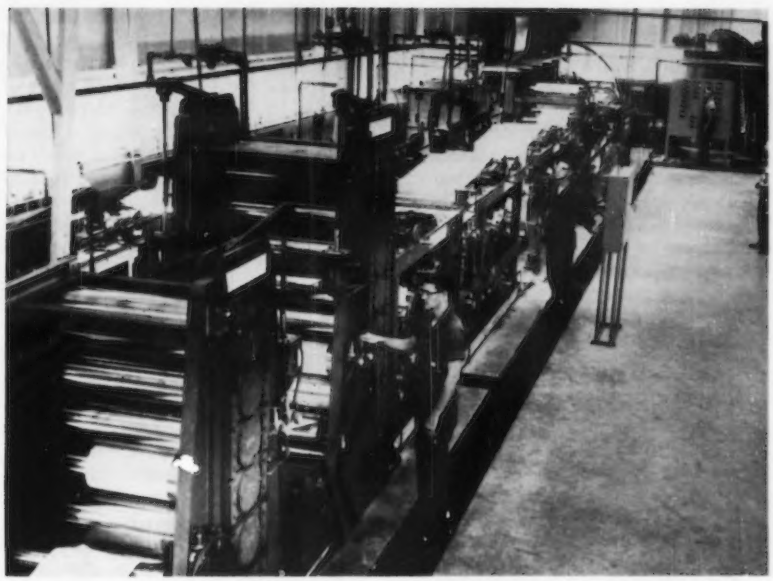
R. T. VANDERBILT CO., Inc.

230 PARK AVENUE · NEW YORK 17, N. Y.

PJT PAPER TRADE JOURNAL

WEEK OF JANUARY 5, 1959

Olin Mathieson Opens Center



This miniature paper machine plays an important part in the research efforts of the forest products operations of the Packaging Division of Olin Mathieson Chemical Corp. Located in the new research center at Monroe, La., headquarters for forest products operations, it is 70 feet long, produces a sheet 24 inches wide, and can operate at speeds to produce 330 feet of paper a minute.

Olin Mathieson Chemical Corp. has opened a new research center and plans an accelerated program of research and product development on its forest products operations. The new facility, called the "Frostkraft Research Center," is located at headquarters for forest products in West Monroe, La. More intensive research towards utilization of local hardwoods as a raw material will be one of the major objectives of the 1959 program.

The forest products operations are part of the packaging Division of Olin Mathieson. The forest products operations cover the production and sales of kraft paper products, pine lumber, hardwood flooring and treated lumber.

The center is under the direction of Dr. David C. Lea, research and development manager. Assisting him at the facility are Dr. Paul Gilmont, in charge of pulp and paper; Lawrence Shipman, head of packaging; Russell Jagoditsh, supervisor of coating operations; and Craig Campbell, responsible for lumber research.

The 12,000 square foot building houses a pilot plant for paper manufacturing operations, laboratories, testing facilities, a technical library and offices.

Included in the pilot plant are an experimental paper machine designed by the Frostkraft research staff, pulping and bleaching equipment, and an experimental coater. The package laboratories contain an inclined impact tester, vibration tester, drop tester, and other testing equipment to simulate field conditions in testing packages.

PCF Converting from Soda to Kraft

Penobscot Chemical Fibre Co. is engaged in a project of changing its bleached soda market pulp mill at Great Works, Maine, over to bleached kraft. The project which will cost about $750,000 is to be completed in February. According to President Eugene H. Clapp, the conversion is being made because of the weakness of the soda pulp market.

Sweden to Cut Pulp Production

The Swedish wood pulp industry has decided to curtail production in 1959, according to an announcement. The output of various types of chemical pulp will be cut by an average of somewhat more than ten per cent. Unbleached kraft will be particularly hard hit, while no curtailment has been considered necessary for bleached kraft. The scheduled reductions should result not only in balance between production and demand but also in a certain decrease in inventories during 1959. The output of mechanical pulp will be curtailed by about 30 per cent. The industry in Finland and Norway is expected to make similar decisions.

Wisconsin Officers

New officers of the Wisconsin Paper Merchants Ass'n. are: Brooks Boyce, Wisconsin Paper Co., president; Ralph Neubauer, W. H. Kranz Co., vice president; Robert Engel, Dixon Paper Co., secretary, and Bert Draller, Draller Paper Co., treasurer. All are from Milwaukee.

Brown Strike Settled

The three-week strike at the Brown Co., Berlin, N. H. mill was settled December 27. Basis for the settlement was an eight cents an hour increase, four cents immediately and four cents in June. The union had been holding out for nine cents, while the company had been offering eight cents, three immediately and five in June.

Southeastern TAPPI to Meet Jan. 23

The next meeting of the Southeastern Section of TAPPI will be held at the General Oglethrope Hotel in Savannah, Ga., on January 23, 1959. On Saturday morning, January 24, the Herty Laboratory and American Cyanamid's Savannah plant will be open for tours.

The usual dinner meeting will be held Friday night. Three papers will be presented during the technical program. Dr. W. Gallay, director of research for the E. B. Eddy Co., will present a critical review of the present state of our knowledge of a number of factors entering into the strength of paper. P. E. Wrist, manager of paper manufacturing reseach for the Mead Corp., will discuss the hydrodynamics of wet end operations. The third paper is by J. D. Robertson, senior chemist with Sonoco Products Co. His paper, which is entered in the Awards Contest, will discuss varying the concentration of neutral sulphite cooking liquor as a function of wood moisture and temperature.

Tacoma Man Named By Hardboard

R. D. Pauley, director of business development for Weyerhaeuser Timber Co., Tacoma, has been elected president of the Hardboard Assn.

Other officers elected at the association's annual meet are: F. M. Hughes, general manager, Forest Fiber Products Co., Forest Grove, Ore., vice president; W. C. Walling, manager, hardboard division, Georgia-Pacific Corp., Portland, secretary; P. B. Shoemaker, vice president, Masonite Corp., Chicago treasurer, and R. S. Spangler, assistant to the vice president, Masonite Corp., assistant secretary.

Elected two two-year terms as director are Mr. Hughes; Mr. Walling; Mr. Shoemaker; A. J. Watt, vice president-merchandising, United States Gypsum Co., Chicago; and Howell Howard, treasurer, Edwin Hines Lumber Co., Chicago.

Mr. Pauley succeeds Mr. Watt as head of the association, whose members manufacture more than 90 per cent of the hardboard produced in the United States.

WMU Alumni to Meet

The national annual meeting of the alumni of paper technology of Western Michigan University will be held January 15th, at the University. The meeting will coincide with the Pulp and Paper Conference which is being held there January 14 and 15.

ALL NEW FOR 1959

With this our first issue of 1959, we present Paper Trade Journal in a new cover and completely new typographical design inside the magazine. The new, more dynamic design was planned to increase eye appeal to the reader and improve readability. The new text type should provide smoother and more comfortable reading for our audience.

The new presentation was developed to suit the characteristics of the average Paper Trade Journal subscriber based on mail surveys of nearly a thousand readers. Our presentation consultant, Walter L. Benz, together with the editors analyzed the data from the questionnaires in order to establish standards for the design and type most suitable to our readers. This method of establishing a basis for physical presentation, known as "readership engineering" was developed by Mr. Benz.

Champion Plans Pulp Sales Department

The Champion Paper and Fibre Co., has announced plans to establish a new pulp marketing department as a part of its marketing organization. Lewis K. Johnstone, presently director of purchases, is being named director of the new unit effective January 5, 1959. Creation of the pulp marketing department is said to be part

L. K. Johnstone

of the firm's continuing program of developing Champion participation in world-wide pulp and paper trade.

Responsibility for the marketing of pulp and related products will be transferred from the paper sales division and the general purchasing department to the pulp marketing department, with a pulp policy committee establishing basic policies covering purchase, sale and investment in pulp.

Tall Oil Contest Winners Announced

Earle Fritz and Charles S. Steiner of Swift & Co., were jointly awarded the first prize in the Albert Scharwachter Tall Oil contest for their paper entitled "Pharmaceutical Grade Sterols From Tall Oil." The Tall Oil Products Division of the Pulp Chemicals Ass'n. was sponsor of the contest. A. B. Doran of Union Bag-Camp Paper Corp., representing the Division as its chairman, presented the prize at a special luncheon. In presenting each winner with his half of the $500 first prize money, Mr. Doran stated that the winning paper contained useful, practical observations and was a definite contribution to the chemistry of tall oil.

The second prize of $250 was presented to Dr. J. Rinse of Chemical Research Associates, Inc., Bernardsville, N. J., for his paper entitled "Aluminum Tallate Polymers."

The third prize of $100 was won jointly by Dr. E. E. McSweeney and Russell D. Bitting of the Battelle Memorial Institute, for their paper entitled "High Softening Point Maleic Modified Tall Oil Rosin Glycerol Esters."

Heavy Fire Damage At Montgomery Box

Fire raged through the Montgomery Paper Box Co. building, Mt. Gilead, late Dec. 23, causing damage estimated in excess of a half million dollars. But firemen from eight companies kept the blaze from spreading.

Paper and Board Production

According to the American Paper and Pulp Assn., the ratio of the United States production to mill capacity for the week ending December 20, 1958, was 92.1 per cent compared with 90.6 per cent revised for the preceding week. The ratio was 92.0 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending December 20, 1958, was 91 per cent compared with 91 per cent for the preceding week and 93 per cent for the corresponding week last year.

(Detailed statistics on page 49.)

PAPER PEOPLE

G-P Promotes Three At Toledo

Promotions for three Toledo Georgia-Pacific personnel, Stephen B. Land, Frank E. Hoffman and Elizabeth Ann Hayden, it was announced recently.

Mr. Land was named purchasing agent of the recent consolidated corporation's purchasing department and that of the G-P paper company in Toledo. Mr. Hoffman will serve as assistant purchasing agent and Miss Hayden as buyer and inventory control supervisor.

Mr. Land has been employed by the firm for almost three years, Mr. Hoffman seven years, coming from Springfield Plywood Corporation, a G-P subsidiary, and Miss Hayden, employed by C. D. Johnson Lumber company in 1950, remained with G-P when the company was purchased by the present firm.

Graham's Detroit Manager Named

Graham Paper Co. with general offices in St. Louis, has announced the appointment of George W. Johns as manager of its Detroit, Mich., Division. He is succeeding George A. Jennings who is retiring after 38 years with Graham. Mr. Johns has been associated with Graham since April, 1950 when he was employed as the Detroit office manager. In May, 1956 he was transferred to Graham's Detroit city sales organization, a position he held until his recent appointment.

Continental Can Appointments

Frank A. Whittall, president of the Continental Can Co. of Canada Ltd., announces the following executive appointments following consolidation of Gair Co. Canada Ltd. into Continental Can Co., effective January 1, 1959. Arnold G. Bennett will continue as vice-president and general manager of the Mono-Perga paper container division. Ewart E. Fry, formerly Continental sales manager of general line containers and crowns, becomes vice-president and general manager of the metal products division. W. George Cowan, formerly vice-president and general manager of manufacturing and converting operations of Gair Co., has been named vice-president and general manager of the new Gair paper products division of Continental and J. Stanley Babbitt, formerly vice-president and general manager of mill operations for Gair Co., has been appointed a vice-president of Continental and consultant to the executive vice-president, James A. Stewart.

VP Elected at Oxford

Harold M. Annis of Chappaqua, N. Y. has been elected vice-president, research and development, of the Oxford Paper Co. Mr. Annis was elected to this position with a background of 22 years of service at Oxford, having served as technical director, manager of sales service, manager of product development, and assistant to the vice-president in charge of manufacturing.

H. M. Annis

Mr. Annis' earlier experience in the paper industry was in technical service at the Mead Corp., and as technical director of Allied Paper Mills.

VP at Westminster

Arthur F. Armstrong, president of Westminster Paper Co., Ltd., has announced the election of Norbert W. Markus, Jr., Rosemont, Pa., as vice-president of marketing.

Mr. Markus, who has been serving as retail product group manager with Scott Paper Co. since 1957, will be responsible for the direction of retail and industrial sales-advertising, sales promotion and market research. (Westminster Paper Co. is an affiliate of Scott, and Scott has agreed to acquire a 50 per cent interest in the Canadian corporation by 1963.)

Scott B of D Elections

Scott Paper Co., has announced that the board of directors has elected Dudley A. Ward as company treasurer.

Mr. Ward, who has been carrying out the duties of treasurer since the death of Paul B. Wyant in June, joined Scott in 1947 as an analyst in the sales accounting department. Two years later he was made assistant distribution accountant, and in 1951 was moved to the sales correspondence department.

He was chosen as cashier for the company in 1952, and three years later he was promoted to the position of assistant treasurer.

The board also elected Jack B. Cowie as assistant vice president in charge of the company's Hollingsworth & Whitney sales division.

Mr. Cowie has directed H & W sales since 1952 and was named general sales manager for that division following the merger of Scott and Hollingsworth & Whitney in 1954. His sales experience with H & W dates from 1930 when he joined that organization as a sales representative in New York City.

Gaylord Names Murray

J. M. Murray, Gaylord kraft pulp and paper mill superintendent, Bogalusa mill is named Gaylord superintendent of production, Bogalusa mill. Mr. Murray will have charge of all pulp, paper and board production units.

New VP and GM at Fort Orange

Robert P. Jones has been appointed executive vice president and general manager of Fort Orange Paper Co., Castleton-on-Hudson, a subsidiary of Sutherland Paper Co.

Mr. Jones succeeds Gaylord Beason, who died recently.

Mr. Jones has been with Fort Orange 18 years, working his way up from laboratory technician. He was formerly vice president in charge of sales.

Fibreboard Project Dir

J. F. Havard, vice president—manufacturing of Fibreboard Paper Products Corp., announces the appointment of William C. Birdsey as project director for paperboard.

NEWS OF CONVERTERS

New Starch for Corrugating Eliminates Cooking

Kobond, said to be the first cold water swelling carrier starch designed specifically for use in the corrugating industry, is now available in commercial quantities from National Starch Products, Inc.

Kobond represents an innovation in carrier starch formulation, since it is pre-cooked by National under carefully controlled conditions. In commercial use, no additional cooking is required. It is simply added to cold water and mixed. The entire batch, carrier and raw starch, is prepared in the secondary mixer thereby changing a conventional two-step process to a single step operation. In addition, Kobond is completely compatible with any raw starch used in corrugating formulations.

According to the company the material increases adhesive efficiency by retaining almost three times as much water as conventional cooked carrier starch. Normally this water is lost into the corrugating medium. When using Kobond however, this water which is held in the adhesive film results in a higher conversion percentage of raw starch solids to adhesive, permitting extended coverage from the raw starch.

Kobond provides corrugators with an unchanging "floor" viscosity in the mixing tank. It resists breakdown even under the most severe conditions of shear encountered in circulating to and from the combiner. Because it is pre-cooked and not subject to human errors during preparation, viscosities are completely reproducable from batch to batch. Machine waste is reduced considerably.

With the expanded use of the variable speed glue roll drive to more efficiently control the mechanical application of adhesive, these characteristics assume even greater importance. With the use of Kobond, it is much easier to arrive at an optimum adhesive spread to balance board quality against adhesive cost.

Instrument Detects Shade Variation on Board

The Gardner Automatic Skip meter, a detection unit for monitoring any product or process that provides optical contrast, has recently been placed on the market.

This photometric instrument was designed originally for a leading manufacturer of paper products for detecting "skip" on paperboard.

The exposure head consists of a light source, sensing photocell, micrometer, relays and control switches. This exposure head, approximately 6 inches x 6 inches x 3 inches, is mounted directly over the moving web of paperboard and is capable of providing continuous monitoring on the production line. There is no need for anyone to check the paperboard visually for "skips" (shade differences ranging from light to dark) or other visual imperfections.

By means of relays, the Skip Meter, approximately 7 inches x 7 inches x 6 inches, will automatically ring a bell, light a lamp, mark the surface, or stop the machinery whenever preestablished tolerance limits are exceeded. It can be modified slightly, as needed, to provide continuous quality control on a number of other products similar to a moving web of paperboard or on a conveyor belt. It is therefore useful in controlling color, color brightness, gloss, haze and turbidity, and in detecting misalignment of revolving rolls. It can also detect smoke.

For further information to cover your specific problems please write to Gardner Laboratory Inc., P. O. Box 5728, Bethesda 14, Maryland.

Riegel Acquires Litho Co.

Riegel Paper Corp., has announced the acquisition of Quality Lithographing Co., Atlanta, in exchange for 14,122 shares of Riegel common stock.

The business will be conducted under the name of Quality Lithographing Division, Riegel Paper Corp. C. W. Barr, formerly president of Quality, will continue as general manager of the new division.

Hoerner to Build Two Plants in '59

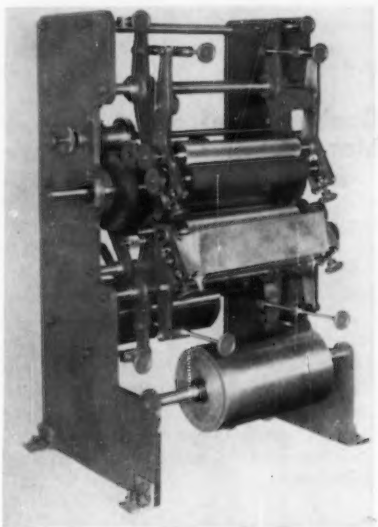
Hoerner Boxes, Inc., has announced plans to build sheet plants at Tupelo, Mississippi and Springfield, Missouri in 1959.

The buildings will be identical in design, and occupy approximately 40,000 sq. ft. of space. Construction has begun at Tupelo, and the plant is expected to be in operation by early summer.

Manager of the Tupelo plant will be Forrest R. Hamilton. He has been a packaging engineer with Hoerner since 1956, and at present works out of their Little Rock, Arkansas plant.

Small-Size Flexographic Press

A new, small-size flexographic press has been recently announced in specifications released by Paper Converting Machine Co., Green Bay, Wisc. The new press, Model 2637, prints two colors against a single impression cylinder at speeds of 500 to



600 feet per minute. It has a repeat range of 8 inches to 16 inches. Running circumferential and side register controls, and progressive adjustments make this a pressman's press. Anti-friction construction assures free running whether used separately or in line with other equipment.

Simplex Adds Widest Extrusion Coater

The widest extrusion coater ever made is located at Simplex Paper Corp.'s Crossett, Ark., plant. Manufactured by Frank W. Egan & Co., the new unit provides Simplex with a highly versatile line capable of em-

CENTRISCREEN

after CENTRISCREEN

after CENTRISCREEN

has been started up in recent months and every single one has been immediately and completely successful.

Bird Centriscreens are totally enclosed, high capacity, pressure screens of advanced design. They are demonstrating extraordinary efficiency of dirt and shive removal and substantial reduction in operating and maintenance cost.

Let us show you what the Centriscreen can do in *your* mill, ahead of *your* machines, on *your* stock.

BIRD MACHINE CO.

SOUTH WALPOLE, MASSACHUSETTS

Regional Offices:

EVANSTON, ILLINOIS • PORTLAND, OREGON

ploying extrusion coaters in combination with reverse roll coaters and reinforcing materials. The Egan extruder features cast bronze heaters manufactured by Thermal Inc., Chicago, Illinois, and is equipped with a 6" extruder of 24/1 length of diameter ratio. It will produce 124" wide polyethylene coated paper. This is the only existing 24/1 ratio unit built for the paper industry.

Originally, the Simplex plant was equipped with two reverse roll coaters, which, in addition to applying asphalt to the web, also carry reinforcing materials. With the addition of the extruder, it now produces a complete line of waterproofed and reinforced papers.

Sterling Buys New Facilities

Sterling Paper Co., Philadelphia, Pa., maker of paperboard products, has acquired the food pail production facilities of the Marathon division of American Can Co.

Lewis Schaffer, president, said the equipment will be moved to the firm's paper plate division at Lewis and Ashland Sts., Philadelphia. Production is scheduled to start February 1.

Greenberg Heads Bag Firms

Three related firms—the Pioneer Bag Co. of Kansas City, Inc.; Pioneer Mesh Bags, Inc., and the Pioneer Used Bag Co.—have a new president, Herbert A. Greenberg, who also heads the Allied Paper Bag Co. of North Kansas City.

Greenberg assumed the presidency from Irven E. Linscomb, who is entering semi-retirement.

Walter Koch Elected

Inland Container Corp. announces the election of Walter G. Koch, of Evansville, Indiana, to the company's board of directors, and his appointment as a vice president of the company.

For many years Mr. Koch was president and chairman of the board of International Steel Co., Evansville, Indiana, fabricators of electronically operated hanger doors.

He is a Director of Southern Indiana Gas & Electric Co., and a member of the board of trustees of Evansville College and Associated Colleges of Indiana. As a member of the executive staff of Inland Container, Mr. Koch will report to N. F. Schaefer, Sr., vice president planning. He will be given special assignments in connection with corporate programs and marketing.

Self-Tightening Core Chuck Prevents Slippage

Guaranteed to prevent cores of web-fed materials from loosening or slipping, a newly engineered, economical, self-tightening core chuck is available from Stanford Engineering Co., Salem, Illinois. Already tested, the chuck is fast and easy to put to work. Two eccentric ribbed

chucks slip into the ends of the web core, against two eccentric lock rings secured to the let-off shaft. There are no threads to jam or slip. Holding action increases as tension on the core increases. A reverse twist instantly releases the chuck and frees the core for the next roll. For more information write to Stanford Engineering Co., Salem, Ill.

Niagara Converter of Mead and Moistrite

The appointment of Niagara Envelope Co., Buffalo, New York, as a converter of their entire line of Mead Bond and Moistrite Bond Envelopes has been announced by H. Warren Kampf, president of Mead Papers, Inc. According to Mr. Kampf, the appointment is effective as of January 1, 1959.

Other converters of their Mead and Moistrite Bond envelopes are the Old Colony Envelope Co., Westfield, Mass., and the Union Envelope Co. of Richmond, Va., and Birmingham, Ala.

The Niagara Envelope Co. and the Union Envelope Co. are also converters of the entire line of Mead Wove "Print-Easy" Envelopes.

Hyde Appointed Manager

Carpenter Paper Co., has appointed Gerald R. Hyde as manager of its Salt Lake City office.

A native of Buhl, Idaho, and a graduate of the University of Idaho, Mr. Hyde will be in charge of operations for Carpenter in Utah, Idaho and parts of Wyoming and Nevada.

Mr. Hyde became a member of the organization in 1955 after serving as credit manager for the Wheeler Machinery Co. in Salt Lake City. Previously he was operations manager for Intermountain Ford Tractor Sales.

BANKRUPTCY SALE BY PUBLIC AUCTION

VICTORIA PAPER MILLS
FULTON, NEW YORK

Wed., Jan. 14, 1959 **10:30 A.M. EST**

FOUR MACHINE PAPER MILL

The entire assets of the Victoria Paper Mills, Fulton, N. Y. will be sold at public auction on the premises of company, commencing at 10:30 A.M. on the 14th of January, 1959, and continuing until all lots are disposed of.

REAL ESTATE:
Industrial buildings, approximately 40,000 square feet of space in four buildings, situated one-half block from downtown Fulton, including boiler heating system, electric lights, sprinkler system, adequate office facilities, connection to city sewage system, truck and railroad sidings on the New York Central Railroad. Buildings have been maintained and are in good repair.

FOUR MACHINE PAPER MILL:
ONE YANKEE FOURDRINIER
TWO—72" CYLINDER MACHINES
ONE STRAIGHT FOURDRINIER
ONE COMPLETE PAPER MILL MACHINE SHOP
Four paper machines, two single cylinder 72" trim machines, one 81" trim, maximum 84" trim. Yankee Fourdrinier Machine, long wire, one straight Fourdrinier Machine, fourteen dryers—81" trim, all machines were running until June 1, 1958 and have been maintained by engineers since—rolls turned, all beaters, jordans and boxes filled with water, all now in A-1 condition. With machines is wide assortment of auxiliary equipment, convertible to use for any paper machine, and capable of immediate production with all auxiliaries in A-1 condition.
beaters screens pumps motors boilers drives vales controls electronic equipment filters 2 tow motors electrical equipment rolls instruments trucks testing equipment welding equipment

MACHINE SHOP:
Completely equipped, capable of making any part or parts used in any paper mill, up to 32" diameter rolls.

COMPLETELY EQUIPPED BOILER ROOM—LATEST ELECTRONIC BOILER CONTROLS

OFFICE FURNITURE:
Adding machines, typewriters, desks, executive chairs, filing cabinets.

Sale will be conducted by H. Meitzer & Sons, Auctioneers, Cicero, N. Y. by order of the Hon. David J. Goldstein, U.S. Referee in Bankruptcy, U.S. District Court, Utica, N.Y.

Mill will be open for your inspection from Monday, January 5th, 10:00 A.M. to 5 P.M., until day of sale.

For a brochure of sale or an appointment to inspect, call or write Victoria Paper Mills, Fulton, N.Y.—Phone Lyric 2-4204 or H. Meitzer & Sons, Cicero, N.Y.—Phone Owen 9-5461 or Syracuse, N.Y. Gibson 6-2114 or Gibson 6-2998.

ANNOUNCING

the Newest Source of Quality Stainless Sheet and Strip in the Industry

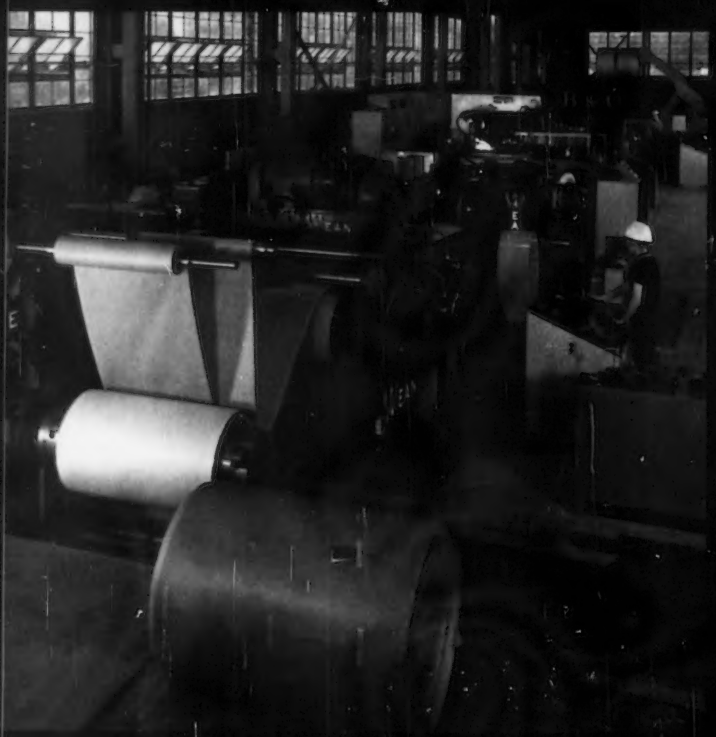
J & L's Completely New Stainless Mill . . .

designed and engineered to give you the fastest delivery on Quality Stainless Sheet and Strip

Now you can demand the quality you need and get the service you want from the most advanced stainless steel sheet and strip source in the industry. J & L's new Sendzimir Mill at Louisville, Ohio, is the result of years of planning by specialists to provide a new facility of such perfection that yield of the highest quality is assured.

J & L can now offer stainless sheet and strip to the most exacting specifications, producing stainless sheets to extremely close tolerances in widths up to 48 inches.

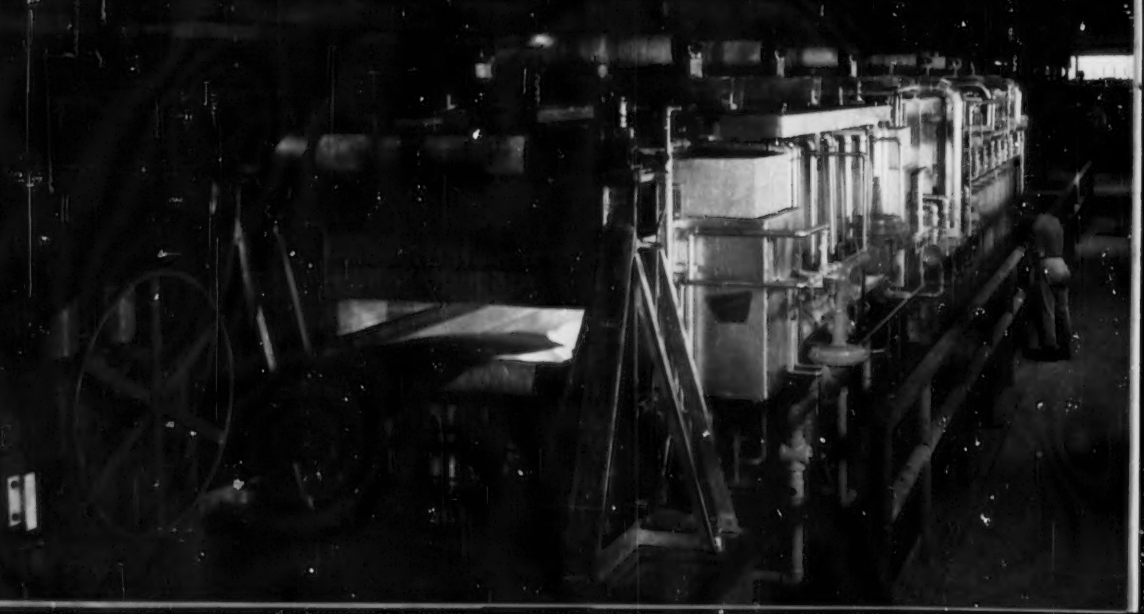
By efficient, flexible scheduling and adequate inventory support, J & L offers stainless steel buyers everywhere the fastest possible service.



▲ Coil Preparation Line for Incoming Hot Rolled Sheet

▲ The 54" Temper Mill

▼ Hot Anneal Furnace—Entry End



▲ The Sendzimir Mill

Interior View of the Intricate Mechanism of the Sendzimir Mill ▶

Scouring and Scrubbing Line ▼

▲ Cold Roll Anneal and Pickle Line—Discharge End

Surface Checking the 50" Slitter ▲

The 50" Slitter. One of Three Slitting Lines for Cutting Coil into Strip ▶

▼ One of the two Shear-to-Length Lines for Cutting Coils into Specified Sheet Lengths

STAINLESS and STRIP DIVISION DISTRICT SALES OFFICES

Write for your copy of the J & L Stainless Steel Sheet and Strip Manual today.

CHICAGO
4010 West Madison Street
Chicago 24, Illinois

EASTERN
Raymond Commerce Building
1180 Raymond Boulevard
Newark 2, New Jersey

LOS ANGELES
Continental National Group Building
2975 Wilshire Boulevard
Los Angeles 5, California

CLEVELAND
The B. F. Keith Building
1621 Euclid
Cleveland 15, Ohio

HOUSTON
Adams Petroleum Center
6910 Fannin
Houston 25, Texas

DETROIT
12301 Hubbell Avenue
Detroit 27, Michigan

INDIANAPOLIS
2301 South Holt Road
Indianapolis 41, Indiana

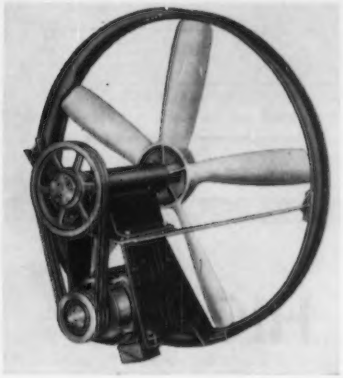
J&L STEEL STAINLESS
BAR • WIRE • SHEET • STRIP

Jones & Laughlin Steel Corporation • **STAINLESS and STRIP DIVISION** • **Box 4606, Detroit 34**

LITHO USA

NEW EQUIPMENT & SUPPLIES

Belt Driven Fan Operates Quietly



A new line of quiet operating, slow speed, belt driven fans has been introduced by Propellair. Designated as Type CB, the new fans are designed for use wherever large volumes of air must be moved at relatively low noise levels and moderate pressures. Such applications would include power plants and manufacturing areas where quiet operation is required.

The new fans are designed principally for wall mounting; standard and heavy duty shuters are available for such installations. They are also designed for use in Propellair's line of power roof ventilators. They are available in 42, 48, 60 and 72-inch sizes with free air deliveries ranging from 14,200 to 58,100 cubic feet per minute.

Type CB fans use high-efficiency airfoil section propellers. Their non-overloading characteristics prevent dangerous motor overload in the event of variable operating conditions. The spark-proof aluminum-magnesium alloy used in these cast propellers has great strength and eliminates bending fatigue often encountered with pressed sheet metal blades. These one-piece blades are in static and dynamic balance.

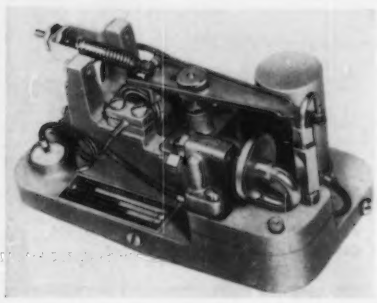
Type CB fans use a heavy-duty bearing assembly equipped with oversize, sealed, prelubricated, cartridge ball bearings mounted in a steel housing to assure permanent alignment. The same bearing assembly is used on all Type CB fans of any one size regardless of horsepower, thus facilitating horsepower changes merely by changing motors and modifying the V-belt drives.

A fully adjustable motor mount allows quick belt tensioning. This universal mounting plate accommodates motors of any cataloged size without the need of re-drilling or special handling. Totally-enclosed, "All Weather" motors power Type CB fans.

For further information write Propellair, Division of Robbins & Myers, Springfield, Ohio.

Temperature Transmitter Covers Wide Range

The Taylor Sensaire* temperature transmitter, recently announced by Taylor Instrument Co., 95 Ames St., Rochester 1, N. Y., is of particular interest to anyone with low cost temperature measurement requirements in the minus 30°F: to plus 1200°F. range.



Versatility and simplicity are offered in a unit having fewer moving parts, assuring longer effective service life. A thumbscrew adjustment zero sets over a wide range. Further range limits and operational spans can be established as needed, right in the field. Only the substitution of a different pre-calibrated and fully compensated thermal system is required. No other changes are necessary, and no barometric effect is noted.

The Sensaire Transmitter is a sturdy compact unit, unaffected by normal plant vibration. It incorporates the smallest bulb presently available in a filled system with other time tested and proven components. A universal type mounting bracket permits installation almost anywhere; on flat surfaces, pipe lines, well wrench heads, on pipe hangers or on separable bushings; and with various degrees of rotation.

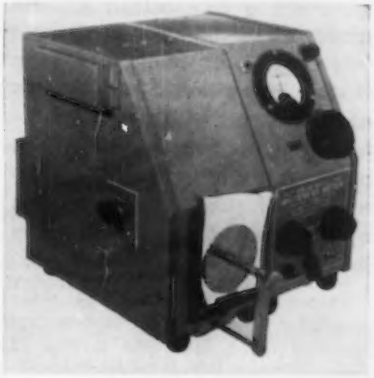
**Trade-Mark.*

New Calculator Available

New paper production and dryer calculator, available free from Pusey and Jones Corp., Wilmington 99, Delaware, permits quick, easy calculation of ream counts, dryer size, type of paper and other mill data. Calculator resembles a slide rule and has 20 different scales, but is simple to operate. It is conveniently sized, measuring only 9⅜" long and 3⅛" high.

New Instrument for Whiteners Measurement

A new instrument has been designed by the Hunter Associates Laboratory of McLean, Va., to measure the whiteness, reflectance, yellowness, and opacity of white and near-white paints, papers, textiles, etc. It can be equipped with an ultraviolet absorbing filter which may be alternated between the incident and viewing light beams to measure directly the contribution of the widely used fluorescent brighteners to specimen whiteness. The instrument uses paired vacuum tubes in a null Wheatstone bridge circuit. It has green and blue tristimulus filters each with a separate pair of phototubes.



The instrument is built in two sections identical in size and shape so that when bolted together they form a small compact unit. On the left side are the light source, phototubes and 2¼ inch round specimen viewing area. On the right side are the measuring circuit, vacuum-tube galvanometer and digital dial. When desired, these two sections can be separated by the cable length between them for convenience of sample presentation. An attachment is available with which to reduce the 2¼ inch round specimen area to ⅜ inch.

DOW | CHEMICALS . . . experience makes them better

When a new product is introduced successfully to industry, the research chemist is pleased at its initial success. But he knows there is still a world of data to be gained from his customers' experience with the product *at work* . . . new facts and factors that will enable it to be tailored more closely to the user's needs. These advertisements are a part of the continuous "conversation" that goes on between Dow and users of chemicals in the paper industry that makes many a good product even better.

You may wish to check certain items in this advertisement and forward to those concerned in your own company.

ROUTE TO:

_____

_____

_____

_____

FLOCCULANT SCORES HIGH IN FILLER RETENTION

When a talented polymer like Separan® NP10 appears . . . one that does many things well . . . it's a temptation to talk about all of them. But of most interest to pulp and paper men is the exceptional boost this new polymer gives to filler retention. Here Separan NP10 has scored heavily in increasing retention of such common fillers as clay and titanium dioxide in the sheet.

Impressive dollar savings were scored by Separan NP10 with several types of sheet. Here are savings of dollars-per-ton, calculated by subtracting the cost of the Separan NP10 used from the value of the filler saved:

55 lb. envelope stock	$ 4.30 per ton
30 lb. magazine stock	$ 4.10 per ton
60 lb. offset bond	$ 2.50 per ton
25 lb. machine-coated carton wrap	$ 5.50 per ton
50 lb. offset bond	$15.15 per ton

Opacity Imperative. An important specification of mills making envelope stock is OPACITY. As you know, the paper mill that wants to stay competitive has to meet it . . . *or else*. One paper maker, to achieve this "must" in his envelope stock, was using abnormally large tonnages of filler clay. And no wonder! . . . his envelope stock was *holding* only 34% of the clay. Then his Dow representative suggested the use of Separan NP10.

This is what happened: At the start of the test a solution of Separan NP10 was added to the machine at the rate of 0.8 pounds per ton of envelope stock. In a short time clay retention started to climb and continued high throughout the test. A check-up a week later showed that clay retention was up from 34% to 71%. And so a cutback was made in the beater clay addition, from 550 pounds to 330 pounds per ton.

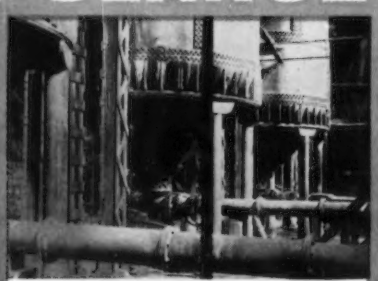
A clear gain in opacity was registered, too. The envelope stock showed an opacity increase from 86.6 to 90.3 percent. An additional 80 pounds of clay per ton of paper was being retained in the sheet. Naturally, the additional clay in the sheet was cheaper than the bleached short-fibre pulp it replaced! Direct savings were 220 lbs. of clay per ton of paper.

Now, a family of Separan flocculants. Originally Separan made its debut as Separan 2610. This new and improved version of the same, called

A QUICK GLANCE

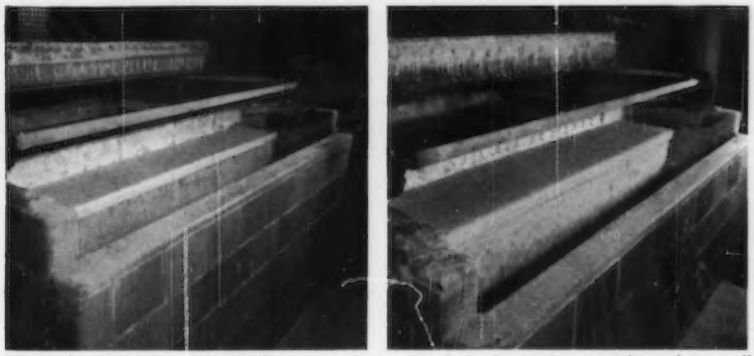
DOWICIDE

Protect lap stock and coatings against mold growth the *right* way with Dowicide® preservatives. Write on your letterhead for technical bulletin.



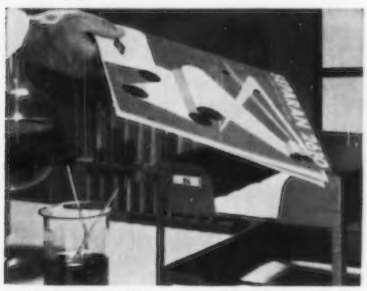
CAUSTIC SODA

Four producing plants and eight shipping terminals put Dow caustic where you want it, when you want it. Excellent quality always is a Dow tradition.



Effect of polyacrylamide-type flocculant shows clearly in these pictures taken of save-all units for paper machines on which Separan was used (left) and was not used (right). Note the much heavier solids removal from latter unit, indicating poorer filler retention on the paper machine.

Separan NP10, is easier than ever to use. Purity and uniformity have been improved, dispersibility substantially increased. And Separan NP10 is now on stream in quantities sufficient to supply mills anywhere. Separan NP20, the newest member of the family, has an even higher flocculating power and deserves your evaluation. Although more expensive, its higher activity may make it more economical to use in your applications.



A new brochure on "Separan in the Pulp and Paper Industry" is now available. Write us, on your company letterhead, for your copy.

DOWTHERM:

puts more "jack" in the box

Cardboard container manufacturers looking for a new way to make more boxes for less may find the answer in Dowtherm®. This organic heat-transfer medium is well known for its thrifty efficiency in many industries, but pulp and paper people have only begun to take advantage of its unique characteristics.

Higher production rates. Dowtherm supplies heat at uniformly high temperatures without the accompanying high pressures necessary with steam. It can be used to heat rolls used for corrugating cardboard stocks to higher temperatures without "beefing up" the equipment to accommodate higher pressures. In this way, units can be produced faster, keeping production costs down where they belong. Dowtherm also offers advantages for similar applications such as for asphalt laminated bags. Dow offers information on Dowtherm that should interest any manager of a plant where the heat's on.

NEW METHOCEL:

saves 'round the calender

Methocel® 90HG points the way to a host of benefits not possible with other methylcellulose formulations or natural gums. For example, it doesn't gel at the temperature of rolls in the calender stack. As a result, paper or board is more evenly coated and the operation is much easier to control. This news should interest manufacturers of fibre packs and laminated asphalt paper.

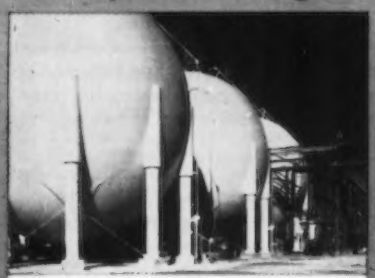
Better printing. The use of Methocel in coating these and other pulp and paper products gives a better surface for printing. As Methocel is non-ionic and sodium free, there is no reaction between coating and ink. And it is resistant to organic solvents used in inks and grease as well. Methocel improves mullen burst strength and the coating properties of most films. Once applied, it does not become plastic in the presence of high temperatures, so hot materials can be packaged in containers coated with Methocel without threat of contamination.

A new 60-page book gives the facts and figures about Methocel. Included are descriptions of the new Methocel products and new viscosities, information about solution preparation, slurries, temperature effects and properties in coatings and in films. An exhaustive bibliography serves as excellent reference for the pulp and paper chemist.

★ ★ ★ ★

IF THESE NEWS NOTES about pulp and paper chemicals are helpful we'd like to have your comments. For more information about any Dow chemical discussed in this advertisement, write to THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Sales Department 940DP1-5.

at other profit-building Dow chemicals



AMMONIA

Cost savings with ammonia base cooking now more attractive than ever before . . . Dow assures abundant supplies for future needs of the pulp and paper industry.

POLYOLS

Whatever your requirements for plasticizers or lubricants, try the wide line of Dow polyols first. New folder lists and describes them briefly.

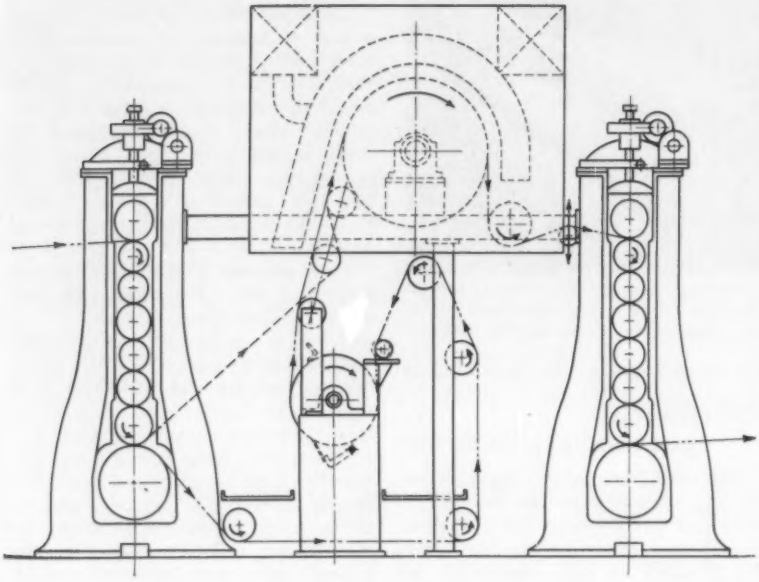
Dow chemicals basic to the pulp and paper industry

Chemical Raw Materials • Pulping and Bleaching Chemicals • Preservatives Plasticizers • Glycols and Derivatives • Methylcellulose Emulsifiers • Solvents Aromatics • Caustic Soda Hydrochloric Acid • Chlorine Soda Ash

The Dow Chemical Company
Midland, Michigan

DOW

3-D High Velocity Dryer for Use With Coaters



A new and unique dryer has been developed for the Black-Clawson Company, Dilts Division, Fulton, N. Y. for use with its "Flexiblade" and other type coaters by Mr. George R. Marsh, leading dryer designer and Black-Clawson staff consultant.

Termed the "3-D" dryer, which stands for high velocity, high temperature and high volume, the new unit features an extremely efficient method of introducing and removing hot air evenly across the web. A laboratory size 3-D dryer has been installed cooperatively in the laboratory of a prominent paper manufacturer for full evaluation at high speeds. Several production units are being manufactured. The 3-D dryer is furnished for paper machine application for either steam or gas heating.

Low Cost Cable Support System

A completely new system for the support of control cables and instrument tubing called Controlway is announced by T. J. Cope Division Rome Cable Corp. It is claimed to provide the lowest installed cost of any cable supporting system.

Controlway is especially suitable for use with control and signal cables wherever circuits under 600 volts are not in continuous operation and ventilation is unnecessary. The system is made of galvanized steel. Available either with or without covers, a complete line of fittings insures flexibility during installation. Straight sections come in 10 foot lengths and widths of 9, 12 and 18 inches. Sections and fittings are joined with a pin-type coupler that permits rigid connections to be made quickly. For more information write T. J. Cope Division Rome Cable Corp., Collegeville, Pa.

New V-Drives Reduce Size and Weight

A completely new line of V-belt drives, featuring smaller and lighter sheaves and V-belts of higher capacity at substantially lower cost, is announced by Dodge Manufacturing Corp., Mishawaka, Ind.

Introduced under the trade name Dyna-V, the new line of drives covers the complete range of hoursepower capacities available in conventional drives. Savings in space, weight and cost are made possible by scientific advances in developing stronger metals for sheaves, and synthetic rubbers and fibers for belts.

With the new Dyna-V line, the majority of industrial drives can be handled with belts only 3/8-inch wide, and sheaves that are greatly reduced in both width and outside diameter, according to the manufacturer. These new drives will offer the design engineer unprecedented opportunities for saving space and cutting costs in power transmission. Smaller and lighter sheaves also tend to prolong bearing life.

Dyna-V drives are being offered in two standard groove sizes to meet all except the largest industrial requirements. Besides the 3/8-inch (nominal top width) size, known as 3V, the company is manufacturing a 5V, or 5/8-inch size for higher horsepowers. Sheaves in the 3V series, from one to 10 grooves, are designed for drives ranging from one to 50 horsepower. The 5V series will include sheaves to take from three to 10 of the 5/8-inch belts, and will handle drives up to 200 horsepower. There is also an 8V series of made-to-order Dyna-V sheaves and one-inch belts, for even higher horsepower requirements, ranging up to 1500.

Taper-Lock bushings for quick and secure mounting on shafts will be an important feature of Dodge Dyna-V sheaves. They contribute to clean and efficient design, and have become the most widely accepted means for interchangeable mounting of wheels on shafts.

Dyna-V belts, besides being smaller in cross section, lighter in weight and stronger, are said to be exceptionally immune to stretching. This solves the problem of matching belts for uniform tension. The new belts are designed with a crowned top and concave sidewalls for maximum efficiency. They will have all the premium qualities, being oil and heat resistant and static conducting.

NEWS OF SUPPLIERS

Cecil Wooddell

James Hamlin

Charles Blanton

Thos. Balog

Manchester Machine Co. Three promotions and one appointment have been announced.

Cecil Wooddell moved up to production control supervisor; James Hamlin was promoted to machining foreman; and Charles Blanton became assistant foreman. Thomas Balog was appointed supervisor, industrial relations.

Mr. Wooddell started with Manchester in 1952 as an apprentice machinist.

Mr. Hamlin started in 1950 as a welder, and became a management trainee in 1956.

Mr. Blanton joined the company in 1952 as an apprentice machinist, and had been a management trainee since May, 1957.

Before joining Manchester, Mr. Balog was manager of employe and labor relations at the Gould National Batteries plant in Trenton, N. J.

New Jersey Zinc Co. has extended its sales representation by establishing a new sales district for this area. John S. Collbran, Jr. will serve as pacific district manager, with headquarters at Los Angeles. Formerly western district sales manager at Chicago, he will take up his new duties on January 1.

J. S. Collbran Jr.

J. P. Sheridan

Mr. Collbran joined the Company in 1945 as a salesman in the Los Angeles office. He was transferred to Chicago in 1949 and became manager of that office in 1954.

James P. Sheridan, since 1954 manager pigment sales, western district at Chicago has been appointed western district manager. Mr. Sheridan has been in the service of the company for more than 35 years, and for the past 22 years he has been a sales representative in the pigment field.

Dorr-Oliver Inc. announces the appointment of Wilco Machine Works, Inc. of Memphis, Tennessee as its exclusive representative in the United States for marketing D-O designed and engineered flakeboard production plants. This firm markets a broad line of process equipment throughout the general wood products industry, furniture and building construction fields.

Pusey and Jones Corp. announced C. H. Butterfield as a sales representative in the midwest.

A native of Middletown, Ohio, Mr. Butterfield went to the university of Cincinnati. He started in the paper industry in 1917 as a mill employee.

C. H. Butterfield

Since 1947, he has been with several other paper machinery manufacturers in a sales capacity.

Lodding Engineering Corp. is occupying its new plant in Auburn, Mass., nearby its former location in Worcester.

General Aniline & Film Corp., Dyestuff & Chemical Division, has appointed Harold G. Shelton general manager. He was formerly director of marketing.

Mr. Shelton replaces Philip M. Dinkins, who as a former vice president of General Aniline, and also general manager of this Division, was recently elected to the presidency of the company, succeeding John Hilldring, now chairman of the board and chief executive officer.

Dresser Industries, Inc., Roots-Connersville Blower Division, announced the appointment of Glenn H. Crocker as general sales manager effective immediately. Mr. Crocker will have responsibility for the sales of Roots-Connersville equipment throughout the United States and Canada.

International Equipment Co. Ltd., Montreal manufacturers of industrial equipment will start manufacturing Mills-McCanna diaphragm valves.

American Potash & Chemical Corp., eastern sales department announced, at Los Angeles company headquarters, two major appointments.

A. J. Dirksen, formerly general sales manager of the industrial chemicals division, was appointed to eastern general sales manager to be in charge of all eastern area sales. Mr. Dirksen joined AP&CC in 1953 as director of the market development department.

A. J. Dirksen

E. M. Kolb

E. M. Kolb, formerly general sales manager of the heavy chemicals division, was named assistant to the vice president and will continue to be in charge of the company's potash activities. In line with this, Mr. Kolb was elected to the board of directors of American Potash Institute in addition to his duties on the board of Potash Export Ass'n.

1958 has been a year of healthy consolidation. The generally lower level of new business we have had in common with most capital goods companies has given us a much needed opportunity to examine all our operations with the emphasis on sharpening efficiencies and stepping up the rate of our technological advance. In both, we have made substantial gains.

The sharpening of efficiencies is evidenced by a number of changes. Our manufacturing costs and delivery times are both noticeably better. A reorganization of our Research & Development group has resulted in a greater emphasis on basic research and a speeding up of development of new processes and equipment. This will ultimately include more and better manpower in both these areas. We have simplified routines, eliminated many nonessential operations and projects which seem to creep in during boom times. This allows us to proceed with less staff, but a more able and experienced one.

The current lag in new business has been much less noticeable overseas, and we have been concerned with a number of very large and significant projects abroad. Our subsidiaries have continued to progress and are contributing substantially to the financial balance of our consolidated effort.

PLANT ENGINEERING — The year's major project was the design of a 150 metric ton per day triple superphosphate plant for Mexico. This large contract includes process engineering, plant design, purchase of equipment and supervision of construction of the granular fertilizer plant as well as attendant facilities such as labs, cafeteria, offices and guest house.

A second substantial current project, which is being carried out jointly by D-O and one of our subsidiary companies in Europe, is the design of a large Yugoslavian copper concentrator. Also engineered abroad were a Belgian dicalcium phosphate plant and the expansion of a German phosphoric acid plant. During the year a large fertilizer installation in England went into operation and was rapidly brought up to operating capacity. A fertilizer plant in Montana and a copper concentrator in Israel, both D-O designed, were put into operation late in the year.

Latest addition to the list of installations which the company can now design is the board plant. We are staffed and equipped to engineer any of the basic types including wet or dry process hardboard and particle, insulating, gypsum and flake board.

PULP AND PAPER — A Canadian pulp producer will install a complete D-O Bleach Plant, and Bleach Washers will be utilized in expansion of an Indian groundwood mill. Late in the year Brownstock Washing and Recausticizing Systems, Deckers and hypochlorite preparation equipment were ordered for a new French mill. At a second French mill, a large Brownstock Washing System was put into operation in 1958.

Recausticizing Systems will be installed at two other new mills, one producing paper in India and the other linerboard in the western United States. Continued evidence of widespread acceptance of the American Disc Filter has been demonstrated by the number of orders entered for this efficient saveall. Also of interest were filters ordered for local manufacture from our Australian subsidiary and our Japanese representative.

FOOD PRODUCTS — In the citrus industry, Merco Centrifuges and Mercone Screening Centrifuges have been applied to the finish-processing of orange juice prior to concentration. Successful also has been application of

ADVERTISEMENT

the Centrifuge-Precoat Filter combination to apple juice processing.

Corn starch washing systems consisting of various combinations of centrifugal equipment were ordered for mills in the United States, Colombia, Holland and Mexico. And, as in so many previous years, the sale of RapiDorr Clarifiers and O-C Filters for cane sugar processing has contributed heavily to orders entered.

FLUOSOLIDS SYSTEMS — Applications of the FluoSolids system were broadened in 1958 to include heat treatment or drying of such materials as foundry sand, phosphate base food products and concentrated detergent and for carbon reactivation. Another new application will be partial roasting of sulfide concentrates at one of Canada's largest smelters.

Other FluoSolids projects now in the design stage or under construction are slag dryers for India and Alabama; pyrite roasters for Spain, South Africa and California; a coal dryer for a midwestern producer and two-stage arseno pyrite roasters for installation in the gold fields of northern Canada. Now in operation or under construction around the free world are over 100 FluoSolids installations on such proven applications as sulfide ore roasting, coal and slag drying, and limestone and phosphate rock calcination.

SANITATION — This phase of our business has been particularly active during 1958 both at home and abroad. Over thirty-five installations of the CompleTreator sewage treatment unit, first introduced last year, are now in operation providing treatment facilities for housing developments, industrial plants, and other small centers of population. Equipment for large domestic projects now under construction include Clariflocculators for a chemical precipitation plant in northern New York State, Densludge Thickeners for the nation's capitol, large Digesters and Distributors for Dallas County, and Clarifiers and Distributors for a Biofiltration plant in Kansas.

Abroad, D-O will supply units for two plants in New Delhi, as well as for installations in Venezuela, Iraq and Kenya. North of the border, extensive additions to the metropolitan Toronto treatment system will be D-O equipped.

Major developments in this field have been the SR Clarifier, a new rapid sludge removal mechanism for final clarification in biological treatment, and the D-O Aerator for the activated sludge process. Installations using both units are already in operation, and a major pulp and paper producer has ordered Aerators for a new waste treatment plant.

COAL — Fine coal recovery and water clarification will be accomplished at Eastern and Australian cleaning plants in large Thickeners ordered within the past year. In a number of instances, an American Filter and ODS Pump will complete the fines recovery circuit.

IRON AND STEEL — Proof of the versatility of the DSM Screen is its application at three points in the heavy media cyclone flowsheet. In its first use on the Iron Range it has considerably reduced magnetite losses. In this general field also the Thickener-Filter combination has continued to be widely applied to recovery of blast furnace flue dust.

CHEMICAL — In 1958 new developments highlighted Dorr-Oliver activity in the far-flung chemical industry. Among the foremost of these was the plastic Filter, a rotary drum vacuum unit constructed of plastic with glass fiber reinforcing. Initial orders indicate the applicability and economy of this unit for mildly corrosive applications.

A second major development, the Merco H-30 Centrifuge, provides the chemical industry with a high capacity, high speed unit capable of clarifying up to 600 gallons of slurry per minute. The product of nearly four years of testing, this machine has substantially reduced operating power requirements per gallon of feed. One of the first commercial applications will be crystal separation at 90° below zero.

Result of yet another new design program is the expanded line of Type L centrifugal pumps. Here, three new designs provide increased capacity and head range and reverse inlet flow for operating speeds of both 1750 and 3500 rpm. In addition, Hypalon elastomer lining is now standard for both Olivite and ODS Pumps.

During the year a German manufacturer ordered the eighth and ninth Horizontal Filters for dewatering artificial resins, and domestic producers purchased Horizontals for such applications as washing ammonium sulfate and nitrocellulose and filtering potash and copperas. Also in the potash field was use of the DSM Screen for debrining crystallizer underflow.

GENERAL METALLURGICAL — Development of an air-lift agitation system for the American Filter has provided a third method of maintaining heavy solids in suspension prior to filtration. Complementing the conventional paddle and swing agitators, this new method has been extensively tested at operating installations.

U. S. and Chilean producers have ordered giant Thickeners with the strongest turntables ever fabricated, and a copper mill in the Belgian Congo will utilize ten large vacuum Filters in a current expansion. New construction at U. S. cement plants includes the three largest Slurry Mixers ever furnished, each 120 feet in diameter, as well as a variety of smaller machines.

WATER — Here also new construction and plant expansions resulted in application of a variety of D-O pretreatment equipment. Two large Hydro-Treator mechanisms will supplement four additional units already in operation at Miami, Florida; and Topeka, Kansas will utilize Presedimentation Clarifiers and Flocculators. PeriFilter systems will be installed at Peoria, Illinois and Leander, Texas; and in Mexico City the first PeriFilter of a new, simplified control design is now going into operation.

Not the least of our gains in efficiency has resulted from new and vastly improved headquarters facilities both here and abroad. Our new International Headquarters was completed here in Stamford in July, the staff of D-O NV expects to move its own new office building in Amsterdam shortly, and our associates in both Brussels and Paris are enjoying new and excellent facilities in co-operatively owned buildings.

In every respect, we are better prepared than ever before to take advantage of the upswing to come and to give better service to our customers throughout the world. This betterment, of course, could only have come about by the diligent and co-operative efforts of our total staff, and to them belongs the credit for the work done.

J. D. Hitch, Jr.
President

November 5, 1958

D-O, American, Merco, RapiDorr, FluoSolids, Densludge, DSM, Olivite, and PeriFilter—Reg. T.M. U.S. Pat. Off.
Mercone, CompleTreator and ODS are trademarks of Dorr-Oliver Hypalon—Reg. T.M. E. I. du Pont de Nemours & Co.

ADVERTISEMENT

Pulp and Paper Machinery Industry Outlook for 1959 and Review of 1958

The pulp and paper machinery industry operated during 1958 at about 50 per cent of capacity. This was due largely to a lack of new plant expansions. Only a very slight improvement is expected during the early part of 1959. It is reported that the pulp and paper industry plans a $4 billion expansion by 1965. If full confidence is established that our economy has been stabilized, sufficient orders should be placed to raise the industry's production level during the second half of 1959.

TABLE I—MACHINERY IMPORTS AND EXPORTS

(Shown in Thousands of Dollars)

Item	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Total 7 Months
Imports	1957	187	168	307	111	319	194	157	1,443
	1958	158	223	311	211	79	192	746	1,920
Exports ...	1957	4,242	3,904	5,754	5,102	5,713	4,897	3,688	33,300
	1958	6,783	6,617	7,337	5,569	4,455	3,074	2,894	36,729

TABLE II—MACHINERY PRODUCTION AND EXPORTS

(Shown in Thousands of Dollars)

	1952	1953	1954	1955	1956	1957
Production	162,922	179,051	176,172	206,986	262,916	N. A.
Exports	27,266	20,452	26,834	31,450	40,242	59,096

Trends In 1958

Pulp and paper machinery as covered in this study consists of pulp plant machinery, paper making machinery, and paper converting machinery.

The value of production of the industry is about one-fourth billion dollars annually. The index of this industry has closely followed that of the Gross National Product in recent years. Gross National Product increased 68 per cent from 1947 through 1955. Pulp and paper machinery production climbed 67 per cent in dollar volume over the same period. However, the 1947-1955 period was one of a generally rising economy. During periods of recession and recovery the industry tends to trail the national economic trends due to long lead time items on order at the advent of recession and to the fact that idle capacity must be put back to use before the paper making or converting industry places orders for further expansion.

The industry is generally concentrated in New England and the Great Lakes Region. This is probably due to early American demand and supply areas for raw materials and products of the machinery.

The status of the pulp and paper industry obviously influences the production level of machinery manufactures.

The following estimates show the picture for 1958:

Pulp production for 1958—84.8 per cent of capacity.

Paper production for 1958—88 per cent of capacity.

Paperboard production for 1958—87 per cent of capacity.

The capacity of 12-15 per cent is not a large amount of slack to be taken up in a rapidly growing industry and it is anticipated that plans for increasing capacity will be formulated during 1959 and 1960 and some large orders reach the machinery producers in the last half of 1959.

Machinery Imports and Exports

Although imports have increased rapidly over the last few years they represented only about one per cent of United States sales. Exports, which have averaged about 13 per cent of production, are very important to the industry. Exports climbed steadily from 1953 through 1957. Table I gives available monthly statistics of exports and imports of paper and pulp machinery for 1958 and comparable months of 1957 as reported by the Bureau of Census in thousands of dollars.

Table II shows the relationship between production and exports for the pulp and paper machinery industry from 1952 through 1957 in thousands of dollars.

Because the paper industry is a growth industry which has expanded rapidly since World War II, a very large amount of the machinery production has gone into new plants and plant expansions. Consequently, when the U. S. economy and the economy of other nations turned downward, the pulp and paper machinery industry had many orders partially completed. Few of these were cancelled so production did not slacken as rapidly as in many other hard goods areas.

1959 Outlook

The paper industry is a growth industry. It is tied to population growth and higher education levels. If our current economic recovery becomes fully stabilized, contemplated plant expansions of paper producers may be formalized and substantial new equipment orders would be placed during the year.

The industry during 1958 was limited for the most part to replacement machinery. Production for the year was about 50 per cent of capacity. It will probably continue near this level during the early months of 1959. Higher production levels are anticipated during the second half of the year. However, because most of the major equipment has a lead time of from 9 to 12 months, shipments will not likely be much above 1958.

From U. S. Dept. of Commerce Special Report ER-58-62

In Scotland...

In Scotland as well as in the U.S.A.... papermakers use and like

ALBACEL & ASTRACEL

CHLORINE DIOXIDE BLEACHED SOFTWOOD SULPHATE

CHLORINE DIOXIDE BLEACHED HARDWOOD SULPHATE

Balanced
Paper-Grade Pulps
Created by Papermakers for Papermakers

Throughout the free world, papermakers use and like Riegel's Albacel and Astracel ... paper-grade pulps that provide the right balance of all important qualities ... brightness, cleanliness, strength, formability and proper beating characteristics.

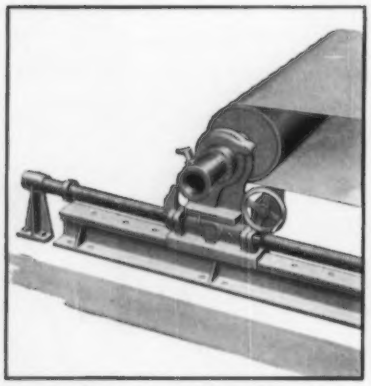
RIEGEL PAPER CORPORATION

260 MADISON AVENUE, NEW YORK 16, N. Y.

BELOIT UNIT MODERNIZATION

Is your Press Section a limiting

MODERNIZATION
WITH PROVED BELOIT UNITS
...CUTS OPERATING COSTS
...INCREASES OUTPUT
...IMPROVES QUALITY



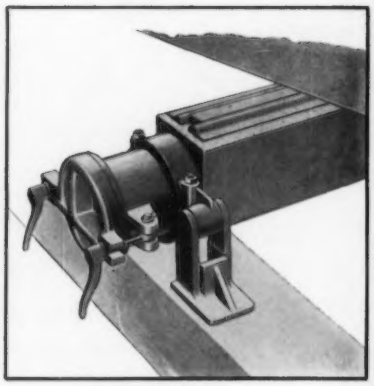
Felt stretch under positive control?

Heavy-duty Beloit felt-stretchers combined with felt tension indicators provide positive control of felt tension and stretch. Optimum felt stretch can be maintained from shift to shift, day to day. Felt life and drainage can be increased—felt guiding is more positive. Seam-straighteners are an integral part of Beloit felt-stretchers. Air motor operators are available for both stretchers and seam-straighteners.

Press crowns a problem?

If so, consider stiffened, rugged Beloit press rolls. Bolted heads coupled with Beloit heavy-wall design result in uniform deflection as opposed to press rolls with cast heads. Heavy-duty antifriction bearings are protected from loss of lubricant or entrance of moisture. Call on Beloit for grey iron, ductile iron, or granite press rolls for dependable service at press, size press, breaker, or wringer roll positions.

PATENTED



Felts filling up?

Many mills have found Beloit felt suction boxes a profitable answer to longer felt life and improved sheet quality. A Beloit felt suction box and shower arrangement provides full-width continuous cleaning—keeps felts clean and open. An adjustable slot width supplies just the right amount of vacuum for the specific application. A low-cost addition that can keep felts cleaner—longer.

PROVED BELOIT UNITS FOR THE PRESS SECTION: FELT ROLLS
PAPER ROLLS • SAVEALLS • PRESS DOCTORS • DIAPHRAGM
LOADING UNITS • SHOWER ARRANGEMENTS • MARKING EQUIPMENT

ONE OF A SERIES SHOWING TYPICAL BELOIT SOLUTIONS TO COMMON MILL PROBLEMS

factor in your production picture?

Modernize your press section with proved Beloit units. Components for the press section of your paper machine shown here have proved to be of special value in increasing output, improving quality, reducing machine downtime, and cutting operating costs. A Beloit press arrangement is available for every paper machine application. Let Beloit sales engineers show you the best press design for your machine. Their suggestions can pave the way to greater profits.

Felts running off periodically?

A felt lost due to guide failure can cost more than a new Beloit air diaphragm felt guide. Why not modernize with a low-cost Beloit automatic felt guide now? The patented Beloit air diaphragm guide moves the guide roll smoothly and efficiently. Its rate of response is independent of felt speed —its outside power supply reduces felt edge wear. The entire mechanism is simple, foolproof, rugged—no small parts subject to easy damage. Models available for every press application.

PATENTED

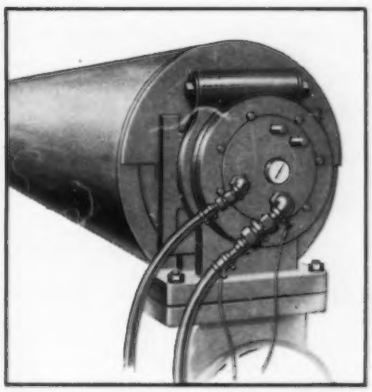
PATENTED

Heavyweight sheets a problem?

The Beloit hot press is doing a fine job on machines running heavyweight grades. The hot press dewaters the sheet after it has been raised in temperature, resulting in greater water removal and a dryer sheet to the main dryer section. The Beloit hot press arrangement may be employed as a plain hot press or a suction hot press depending upon your requirements. When used as a suction press, the hot press employs the unique Beloit air-bleed principle.

Speed limited by drying capacity?

Get maximum sheet dewatering at minimum cost with Beloit suction rolls. Machines can run better at increased speeds and with improved operating efficiency—and a dryer sheet entering the dryer section. There's a Beloit suction roll for every press section application: suction press, suction pick-up, suction pressure, suction transfer, suction felt, suction wringer, or suction hot press.



PATENTED

» **ACT!** *Write for facts —or let a Beloit Sales Engineer show you how to modernize your Press Section. Beloit Iron Works, Beloit, Wis.*

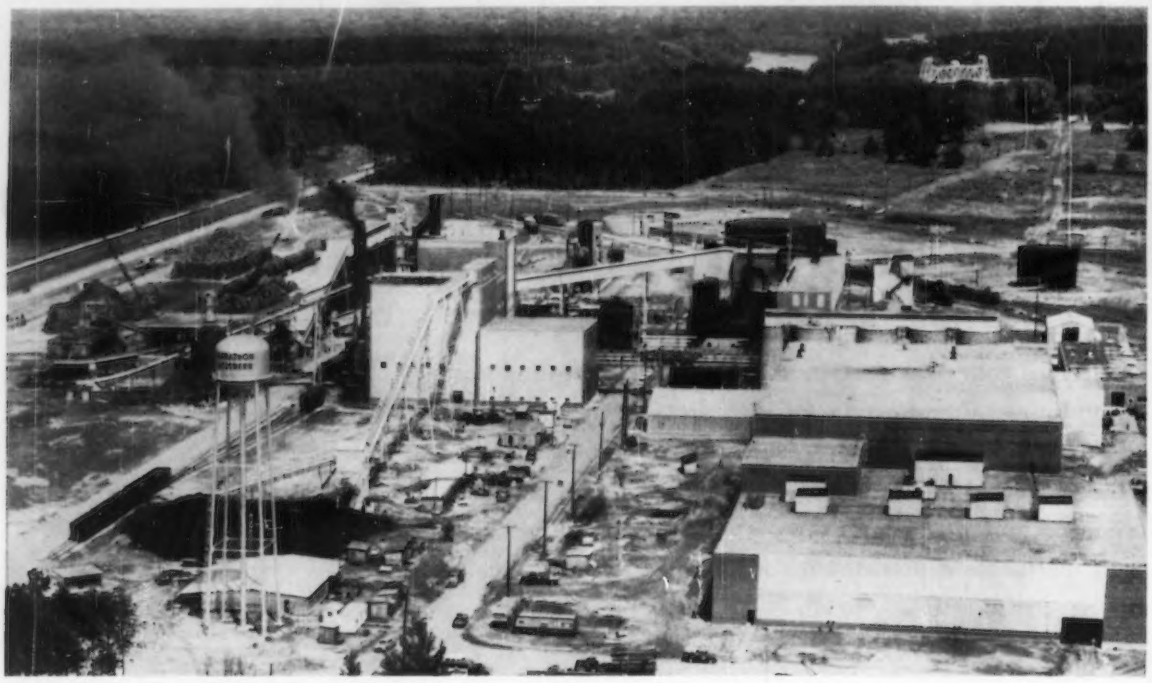
BELOIT IRON WORKS PAPER MACHINERY BELOIT, WIS., U.S.A. 100 YEARS 1858 - 1958

BELOIT

PAPER MACHINERY

your partner in papermaking

© 1958 BELOIT IRON WORKS



Making use of the latest improvements in pulp and paper processes . . .

New Marathon Southern Mill Manufactures Wide Variety of Products

Paul D. Van Derveer
Associate Editor
Paper Trade Journal

Marathon Southern Corp. marked the completion of their new kraft pulp and paper mill at Naheola, Ala. early in the month of December with the start-up of a new 192-inch light weight board machine. A tissue machine and pulp drying machine together with a converting plant had already been in operation at this site for several months.

The new mill will produce pulp and paper for its own use as well as for other Marathon plants and for sale to market customers. Toilet tissue, towels and napkins will be made in the converting plant. Grades of paper produced will range from lightweight sanitary tissue to the lighter weights of bleached kraft paperboard. In full production, the plant will employ about 650 workers.

Pulp wood will come from the vast acreage of southern woodlands that the company owns, leases or has access to within a 300-mile radius of the mill. Marathon selected this 1100 acre site on the Tombigbee River near Butler, Ala., because it is in one of the best wood growing areas in the nation; because the river has a good flow of water the year-round, simplifying the effluent disposal problem; and because there is a good labor supply in the area. The site extends along the river for about two miles. Some other parcels of land on the east side of the Tombigbee are also owned by Marathon. From this plant, Marathon can serve the southern, southwestern and mid-Atlantic markets with its products.

The construction of this plant had been considered by Marathon since 1950, and two years were spent in selecting the site. Over 40 sites for the new plant were under consideration before finally selecting this one in Jan., 1954. Engineering was

View of woodyard shows part of pulpwood storage pile and 700 foot flume supplying barkers. Building at left contains sorting table, chippers, and chip screens.

started in late 1955 and ground was broken in June 1956. The first digester at the new mill was blown on the 10th of August, 1958. The converting plant had been started six weeks earlier, using paper from Marathon's northern mills, and the tissue machine began operation on purchased pulp August 4th. No. 2 machine was started in early December. Engineering and construction was done by J. E. Sirrine Co.

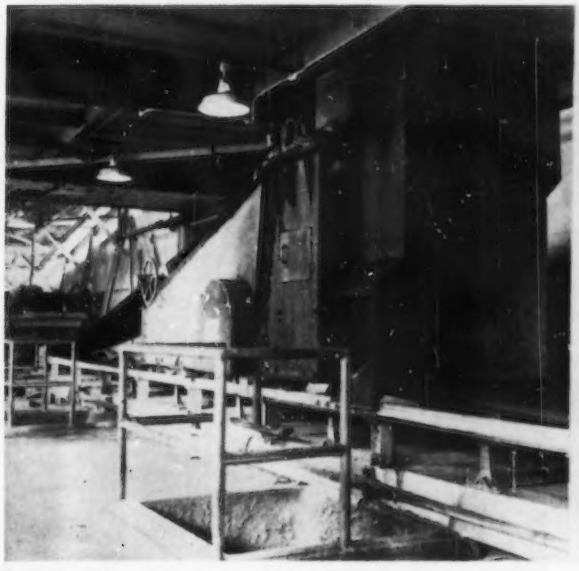
The mill is served by the Meridian and Bigbee Railroad, a subsidiary of American Can Co., which is an east-west connecting railway 50 miles long supplying the mill with wood, chemicals and other raw materials. It connects with several railways, among them the L. & M., S. & C. (a short logging railroad), A. T. & N., G. M. & O., I. C., and the Southern Railway System. These generally run north-south. In addition, Alabama has a good highway system for transportation of goods and supplies by truck.

Woodyard to Digesters

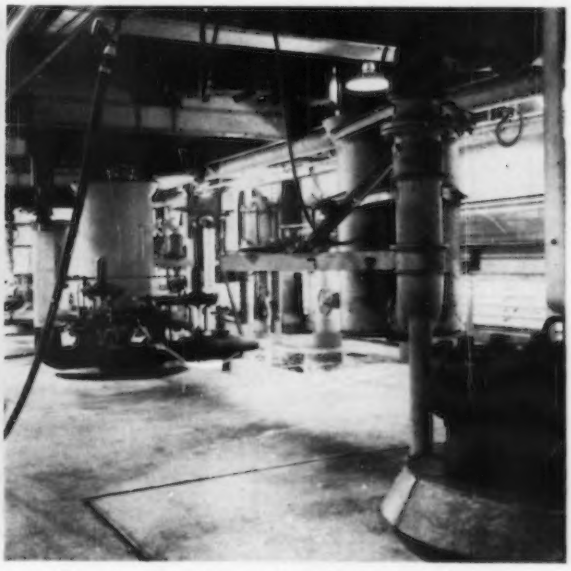
There are two Fibre Making Process barking drums 67½ feet long. They are supplied with pulpwood from storage by a 700 foot flume carrying the wood to a single chain conveyor which feeds the barkers. Two 7500 g.p.m. pumps recirculate water in the flume. Bark is used for steam generation. Two conveyors carry wood from the barkers to a sorting table to two 110-inch chippers, one supplied by D. J. Murray, the other by Carthage. Chips are then conveyed to three Rotex chip screens with oversize chips going to a Murray rechipper and back to the screens. Accepted chips are then conveyed to four chip silos of steel construction holding 200 cords each.

The mill also has an unloading and conveying system to handle truck and hopper cars containing purchased chips. The chippers at present are run about 10 hours a day. Pulpwood usage is about 475 cords per day, although at rated capacity the mill will require about 600 cords per day.

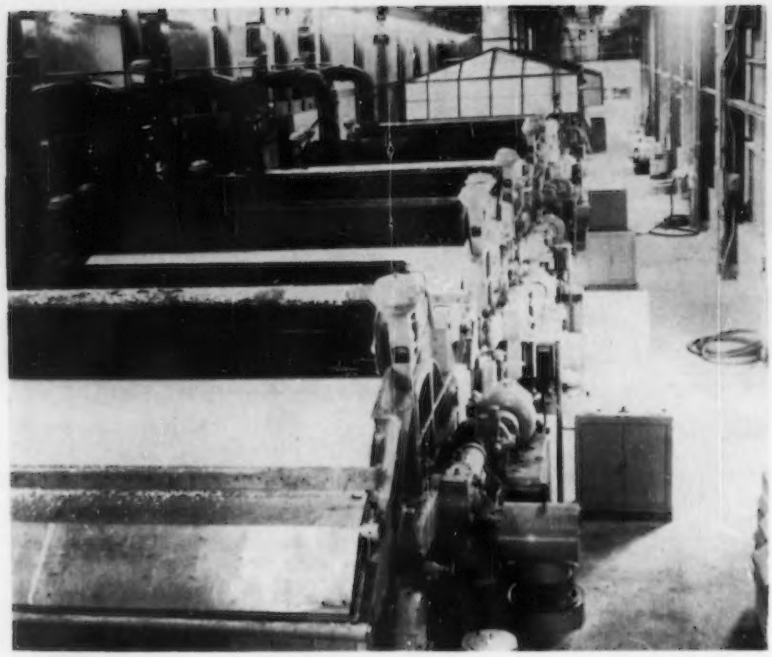
Chips are removed from silos by rotary plate feeders to a horizontal conveyor then to a long belt conveyor which elevates the chips to the tripper car over the digesters. With the aid of a weightometer, a predetermined tonnage of chips is loaded in each digester. The tripper is in a room above the digesters and chips are fed through a hole in the floor into a funnel over each digester. There are five digesters each of 4750 cu. ft. capacity and equipped with a funnel which swings into position over the digester while loading liquor and chips simultaneously. The



Tripper and conveyor pour chips through opening in floor.



Funnels pivot into position for loading digesters.



Bleach washers in foreground. Brown stock washers at rear are hooded. Bleach system utilizes hydrogen peroxide in fifth stage.

funnels are swung out of the way after loading so that the digester may be capped.

Pulping

The digesters are constructed of mild steel 2 inches thick. Four of the digesters are equipped for direct heating, and one is equipped with an indirect heating system which is on trial. The digesters feature automatic cooking using the latest controls made by Foxboro. Liquor filling both black and white, steaming, relieving and blowback are all controlled by instruments. Blowing is done by remote control using Paul blow valves. There is one blow tank of the vertical type with bottom agitation. It holds somewhat over three cooks. It is equipped with mining nozzles and agitator by Impco.

Washing

The pulp is pumped from the blow tank to pre-knotters by a variable speed pump. Quantities are recorded and controlled here by a magnetic flow meter. The pre-knotters as well as the line of three 9½ foot diameter by 16 foot face washers which follow were supplied by Impco. Consistency regulators are by DeZurik.

From the brown stock washers, pulp goes to two washed stock chests each holding 8 tons of stock at 3½ per cent consistency. The stock next goes to the screen room where there are four Impco primary screens and one secondary. Accepted stock continues on to a Dorr-Oliver 11½ feet diameter by 20 feet face valveless decker and to the screened stock chests of which there are two, holding eight tons each.

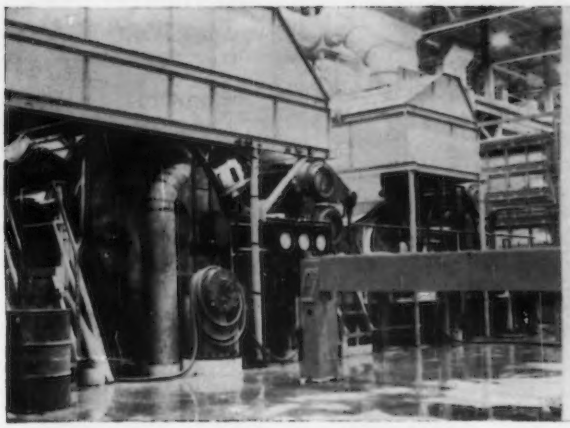
Rejects from the pre-knotters are transferred to a collecting tank, mixed with black liquor and fed back to the digesters through the black liquor measuring tank. Screen rejects are refined in a Sprout Waldron refiner and taken back to the primary screens. Both screen and knotter rejects, if desired, can be routed to a Jackson-Church press for dewatering, then to the collecting tank and digesters.

Bleaching

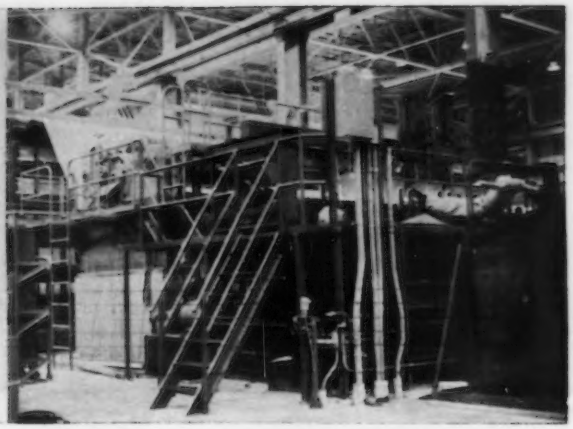
Believed to be the first such system in this country, the mill utilizes a five-stage system of chlorine, caustic, hypochlorite, chlorine dioxide and hydrogen peroxide. Such a system was discussed in a paper given at the 1958 Alkaline Pulping Conference in Hot Springs, Ark. Advantages of using this process were said to be that it gave little degradation and excellent brightness stability.

The flow of screened stock from the chests to the five-stage bleach plant is controlled and recorded through the use of a magnetic flow meter. The stock first goes to the chlorination stage where it enters a pre-retention tube at 3½ per cent, then to the upflow chlorination tower. Chlorination is controlled by the Black Widow, a photoelectric device which measures brightness and automatically regulates the chlorine feed rate. The remainder of the bleaching system, other than washers, consists of a downflow caustic tower, downflow hypochlorite tower, upflow chlorine dioxide tower, and upflow hydrogen peroxide tower. Mixers for the sys-

Bleached pulp is stored in these high density storage tanks. Off color pulp is stored in transition tank in foreground.



Wet end of pulp machine has 156 inch mold. Machine has capacity of 240 tons per day to handle production swings.



Dry end of pulp machine. Pulp sheets are conveyed from layboy to right where press and baler are located.

tem were supplied by Kamyr, and include single shaft and double shaft mixers, an air and star feeder combination, and a single shaft sulfur dioxide mixer after the final peroxide stage. The five washers are 9½ feet in diameter by 16 feet face and were supplied by Impco.

Bleached pulp is then conveyed to four high density storage tanks at 14-16 per cent consistency. The tanks, tile lined and 30 feet by 60 feet in size, were supplied by Kalamazoo Tank and Silo Co. Pulp from these tanks can go to any one of the three machine chests where consistency is 3½ per cent. Located in the same area between the pulp mill and machine room is a 17 feet diameter by 60 feet high transition tank which is used to store off color pulp until such time as it can be fed back into the system. This pulp is then dissipated by re-bleaching it in the last two stages.

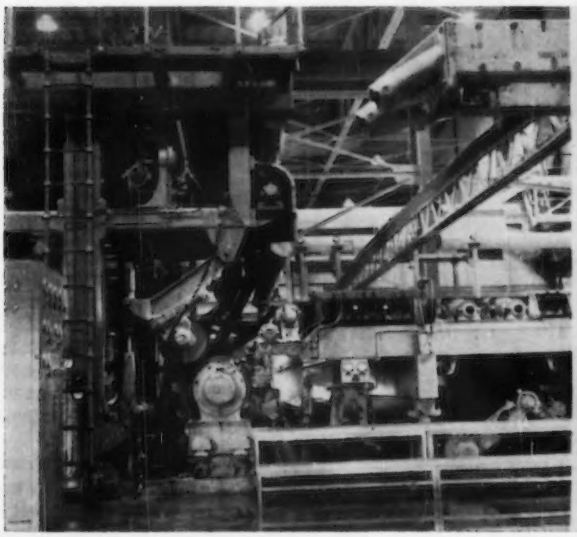
Centralized Chemical Preparation

An important feature of this mill is the centralization of chemical preperation in one area operated by two men. This centralization was carried out to a much greater extent than other mills and has the advantages of safety, centralized control, and lower labor costs.

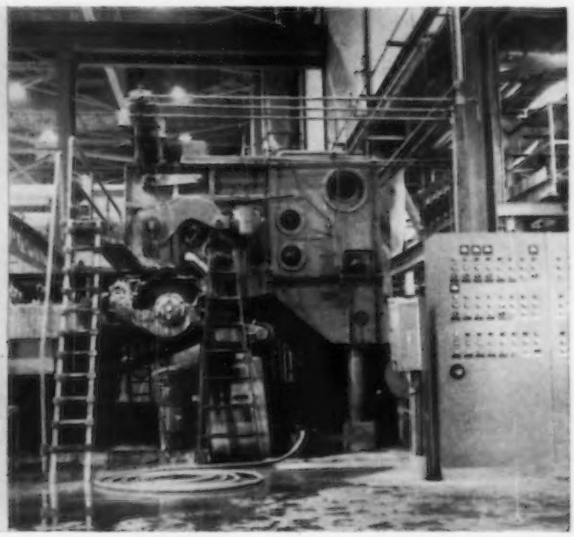
In this area, demineralized water is prepared for the boilers; chlorine is vaporized for the bleaching system and water filtration plant; hypochlorite bleach liquor, chlorine dioxide solution and peroxide bleach is prepared including the manufacture of silicate solution from water glass. In addition, this area is the unloading and storage point for caustic soda, chlorine, sodium chlorate and sulfur dioxide. Turpentine is also stored in, and shipped from, this area.

Paper Machines

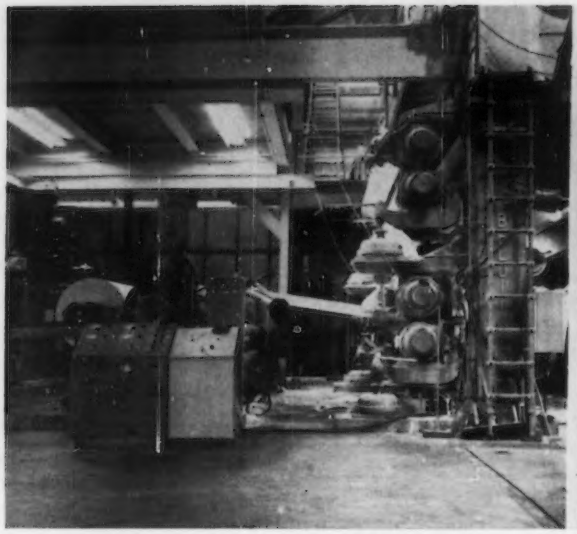
There are two Beloit paper machines each with 192 inch wires; No. 1 producing toilet tissue and napkin in a range of 10-17 lb. basis weight is designed for 2500 f.p.m. and is currently operating at about 2000 f.p.m.; No. 2, an all-purpose machine with a design speed of 1700 f.p.m., produces bleached kraft paper and board in a range of 25-175 lbs. Also in the machine room is a pulp machine with a Sandy Hill Kamyr wet end and a Svenska Flakt dryer fol-



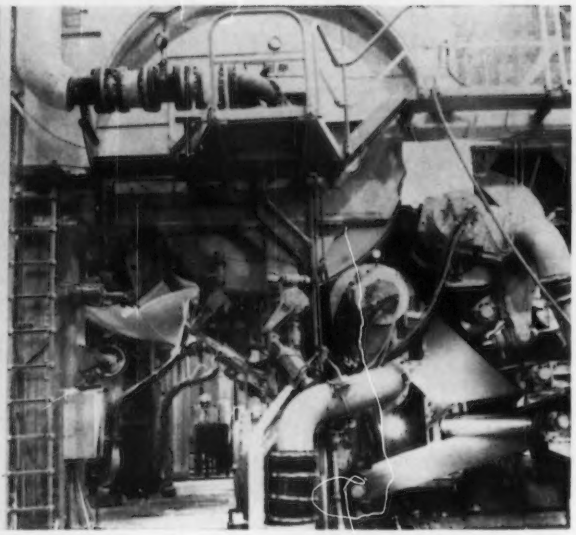
Tissue machine fourdrinier section and pick-up. Wire width is 192-inches. Design speed is 2500 f.p.m.



Pressure headbox and control panel of tissue machine. Both hardwood and pine pulps are used for tissue production.



Calenders and reel of tissue machine which produces toilet tissue and napkins in a range of 10-17 lb. basis weight.



Yankee dryer is 12 feet in diameter. Pressure rolls hold sheet against the dryer. Suction press precedes them.

lowed by cutter, layboy and conveying system to the pulp press and baler.

With pulp mill capacity of 315 tons per day, it is expected that net production will be about 60 tons per day on the tissue machine, about 120 tons per day on No. 2, and about 135 tons per day on the pulp machine. With a 156-inch mold, the pulp machine has a capacity of 240 tons per day in order to take production swings necessitated by changes in grade or downtime on the two paper machines.

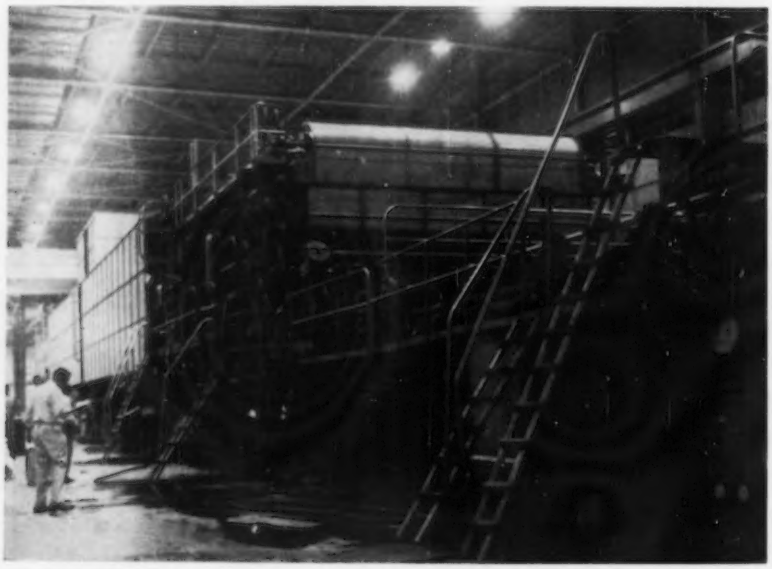
Tissue Machine

No. 1, the tissue machine trimming 186 inches, has a pressure headbox and is equipped with table rolls and deflectors. There is conventional pick up and a suction first press followed by the first and second pressure rolls holding the sheet against a 12-foot diameter Yankee dryer. The press section has three felts; a top, bottom and hot felt.

The stock preparation for No. 1 is such that pine pulp comes directly from high density storage to the pine dump chest, then passes through a refiner to the Trimbey proportioner. Hardwood pulp, from the pulp drying machine, is dispersed in a No. 8 Pulpmaster, then goes to the pulper dump chest from which it is pumped to the proportioner. Broke is also metered into the system at this point and the mixture continues on to a refiner and then to the machine chest.

From the machine chest, stock goes to a jordan (with consistency being regulated here) and then is pumped to two Selectifier screens. The screened stock next goes to a Bauer Centricleaner system consisting of eight primaries, one secondary and a tertiary unit. The fan pump transfers accepted stock from the cleaners to the headbox.

Of the two refiners used in the stock preparation system, one is lava filled with a 250 h.p. motor, the other is metal filled with a 350 h.p. motor. The jordan is also powered by a 350 h.p. motor.



No. 2 paper machine is all-purpose, produces bleached kraft paper and board in a range of 25-175 lbs. basis weight. Design speed is 1700 f.p.m.

Stock Preparation for No. 2

Equipment for No. 2 machine stock preparation includes three refiners (one lava filled with 250 h.p. motor, and two metal filled with 350 h.p. motors), two jordans powered by 350 h.p. motors, a Trimbey proportioner, four Selectifier screens, and thirteen Centricleaners.

In the stock preparation system, hardwood pulp sheets are broken up in an 8000 lb. capacity Pulpmaster and transferred to a dump chest while pine goes from high density storage to the pine dump chest. Un-

bleached pulp comes from the pulp mill to the unbleached dump chest. Pine and/or unbleached pulp is fed to a refiner then to the proportioner. Hardwood pulp goes directly to the proportioner. The mixture goes to the refiners and then to the machine chest. The stock is next taken to the two jordans, where a consistency regulator is located, then pumped to three primary Selectifier screens. Rejects go to a secondary Selectifier screen and back to the primary screen pump. Screened stock continues to the Centricleaner system (which includes 10 primaries, 1 secondary, 1 tertiary), and accepts are pumped to the headbox.

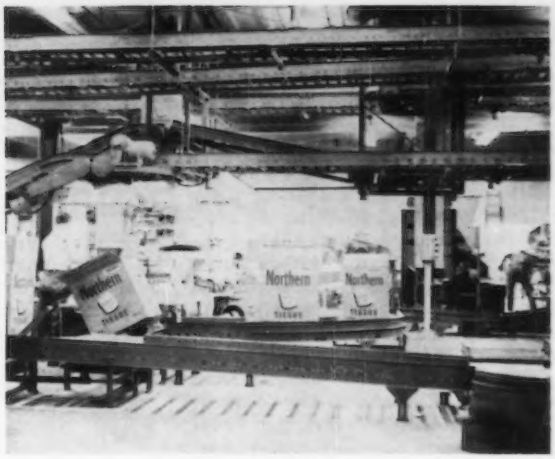
No. 2 paper machine also trims 186 inches and has a pressure headbox, suction pick-up and three presses in the press section. The machine has three dryer sections with 34 paper dryers, one creping dryer and 10 felt dryers. The dryers are all 5 feet in diameter except for the creping dryer which is 8 feet. It is located between the first and second dryer sections. There are 12 dryers in the first section, 15 in the second, and 7 in the third.

A size press is between the second and third sections, and two 8-roll calender stacks are located after the third section. The machine reel is next and is followed by a coater section with trailing blade coater, a coating reel, unwind stand and winder.

Additional equipment includes automatic broke handling systems and 9 foot by 7 foot American disk type savealls for both machines. The broke system is centralized with broke from the machines going to Liebeck pulpers then to the broke chests. Broke from No. 1 and No. 2 broke chests plus that from the converting broke pulper goes to a central broke chest from where it is pumped to the bleach plant. Finishing equipment consists of one 72-inch sheeter, a 65-inch trimmer, and 108-inch rewinder. The roll handling system is automatic and includes a roll wrapping and roll heading machine.

Converting

Equipment to convert the paper made on No. 1 machine into Northern Tissues includes four 90-inch automatic toilet roll rewinders, four toilet roll log saws, four single roll toilet wrappers, and two 3 or 4-roll toilet wrappers. Service roll equipment includes another 90-inch automatic toilet roll rewinder, toilet roll log saw, and single roll toilet wrapper. In addition there are four napkin folders for stock product napkins and Northern napkins.



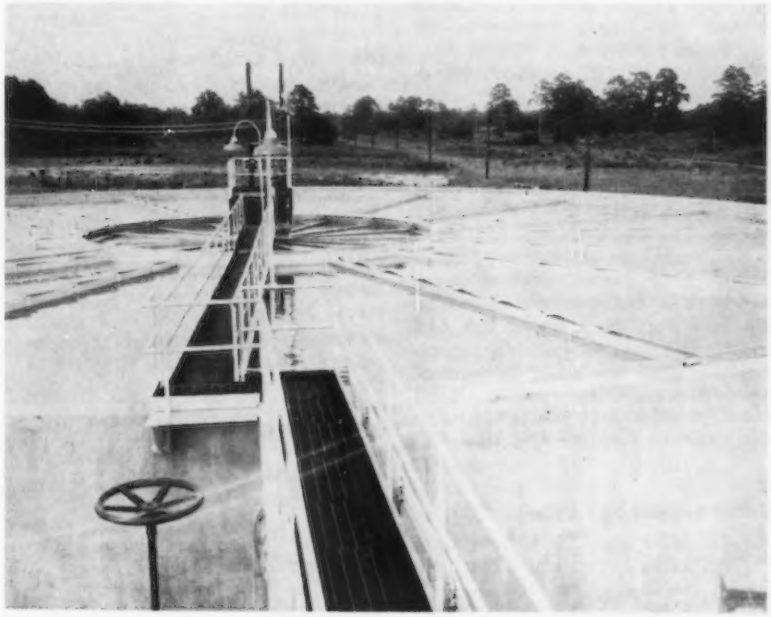
Converting area view shows elaborate conveyor system as boxes of tissue move to shipping.

Paper from No. 2 machine may be converted into towels and this is handled by an 88-inch automatic towel rewinder and a roll towel wrapper. Folders for bleached towels include one 60-inch and one 45-inch folder. Other equipment in the converting area includes a core machine with automatic core conveyor, finished products conveying system and broke pulper.

Power and Recovery

The spent cooking liquor from the pulp mill is stored in two large tanks in the evaporator area and is fed to a Swenson vertical tube evaporator consisting of six bodies with internal heaters in five of the bodies, the 6th effect being the body in which no internal heater is installed. These bodies evaporate the liquor to approximately 50 per cent total solids. A shell and tube surface condenser using cooling water from the mill supply reservoir serves to pull a vacuum on the last effects. The first effects are heated with 50 lb. steam from the power plant.

The evaporated liquor next goes to a storage tank and is fed to the recovery system where it is further evaporated through a Venturi scrubber. Make-up salt cake is added to



Clarifier where water from the Tombigbee river enters initial phases of processing.

the liquor following the Venturi and is fed by pumps to the recovery boilers. One Babcock and Wilcox boiler rated at 350 tons bleached pulp per day is used in this operation. In the recovery process about 95 per cent salt cake and 95 per cent lime is recovered.

Design capacity of the Riley Stoker Corp. power boiler is 300,000 lbs. steam per hour, that of the Babcock and Wilcox recovery boiler 181,000 lbs. per hour. Both coal and bark are used as fuel. The six evaporators in the recovery system are rated at 378,000 lbs. per hour.

Power is supplied to the mill from a General Electric 15,625 kilowatt double automatic extraction condensing steam turbine-generator. Steam initially enters the turbine at 850 p.s.i. gauge and 825°F. Steam is automatically extracted from the turbine at 150 and 50 p.s.i. gauge. The generator is hydrogen cooled. G. E. also supplied switchgear, substations, and motor control centers as well as general purpose control for the mill drive.

Caustic Plant and Lime Kiln

Raw green liquor from the dissolving tanks is pumped to a 40 foot diameter x 24 foot clarifier for removal of impurities. Resulting clear green liquor goes to a 15 foot diameter x 15 foot 8 inch primary slaker where lime is added, to a Dorr-Oliver secondary slaker. It then goes through three 11 foot 6 inch diameter x 11 foot causticizer tanks. The white liquor is then clarified in a 40 foot x 14 foot tank and placed in storage tanks ready for use in the chip cooking process. A total of 300,000 gallons of white liquor is produced daily.

Insoluble material separated from the white liquor is washed in another 40 feet diameter x 14 feet clarifier and the resulting lime and mud slurry is pumped to the lime recovery process.

The lime mud first goes over a vacuum filter for removal of water and is then fed into the kiln. The kiln is 9 feet diameter x 250 feet long, burns natural gas and rotates at 0.68 r.p.m. A total of 50 tons of lime is recovered daily and is stored in a 7300 cubic foot silo ready to be used again in making white liquor.

Water Supply and Effluent

Water is supplied to the mill from the Tombigbee River, and is clarified, filtered and then stored in a 2½ million gallon storage tank. Mill effluent first goes to a clarifier then to a sludge lagoon of 35 acres. After heavier materials have settled, it flows to the 175 acre effluent storage pond. The controlled flow passes from here through a venturi system and is distributed across the Tombigbee River during high water periods.

Personnel

Heading up the operations of Marathon Southern's big mill are John E. Spalding, mill manager; J. V. Martin, woodlands manager; and George Brabender, ass't to manager. Other key men are Hansell Wade, pulp mill superintendent; Earl S. Moak, paper mill superintendent; George Smits, converting superintendent; James Kocha, plant engineer; James Anderson, chief accountant; Rudolf (Rudy) Richter, technical services supervisor; and Don Hesselman, production services supervisor.

In charge of sales for Marathon Southern are Urban Krippene, sales manager for paper and Harold Skinner, sales manager for pulp. Their offices are in Menasha, Wis.

Suppliers of Major Equipment

Aluminum tanks	R. P. Cole Mfg. Co.
Bark and grit collectors	Link-Belt
Barking drums	Fibre Making Process
Blow heat recovery control system, heat exchangers (3)	Rosenblad Corp.
Blow valves	Paul Valve Corp.
Brown stock and bleach washers, blow tank agitator	Improved Machinery
Chemical feeders (water supply)	Roberts Filter Mfg. Co.
Chemical feed gang pumps	Milton Roy Co.
Chip magnet	Dings-Magnetic
Chippers	Carthage and D. J. Murray
Chip silos, blow tank, filtrate tanks, bleach towers, water storage tank	Rothschild Boiler & Tank Works
Chip screens	Orville Simpson Co.
Chlorine vaporizer	Richard Armstrong
Clarifiers, sandfilters	Graver Water Conditioning Co.
Consistency regulators	De Zurik
Conveying systems	B. L. Montague (steel), U. S. Rubber (belts)
Crawler crane	Harnischfleger Corp.
Cutter	Lambs-Gray Harbor
Digesters	Chicago Bridge & Iron
Evaporators	Swenson Evaporator Co.
Flakt pulp dryer	American SF Products, Inc.
Flume conveyor	Ingalls Ironworks
Glass lined tanks	Pfaudler Co.
Heat exchanger (1)	Patterson-Kelley
Instrumentation	Foxboro (digester and bleaching) Bailey, Taylor, Westinghouse
Kamyr wet machine, alkaline and ClO_2 radial flow mixers, Kamyr air pressure feeder	Sandy Hill Iron & Brass Works
Layboy	Matthews Conveyor
Lime kiln	Traylor Eng.
Motors	Marathon Electric Corp.
Power boiler	Riley Stoker Corp.
Pumps	Ingersoll-Rand, Peerless, Hills-McCanna
Recovery boiler	Babcock & Wilcox
Refiners	E. D. Jones, Sprout-Waldron
Screen rejects press	Jackson-Church
Splitter	D. J. Murray
Stock chests, storage tanks	Kalamazoo Tank & Silo
Stock cleaners	Bauer
Tanks	Dixie Steel & Supply Co.
Thickener, recausticizing system	Dorr-Oliver
Turbo-generator	General Electric
Vibrators (chip silos)	Syntron Co.
Weightometer	Merrick Scale Co.
Yankee and fourdrinier machines	Beloit

World Pulp and Paper Capacity Expansion to Continue

Darwin DeGolia

Foreign Trade Specialist
U. S. Dept. of Commerce

Optimism for the future of the pulp and paper industry exists in many paper-producing countries overseas, if reported plans for mill expansion can be taken as a guide. From several different areas of the world, Foreign Service reports have been received which illustrate the trend in plans to expand existing mill capacity during the next few years.

The immediate prospect, however, is perhaps less optimistic, as many foreign mills operated below capacity during 1958 and must take up the lag between capacity and output before actually proceeding with expansion.

Finnish Expansion Plans

Finnish chemical pulp is a good example of the general confidence in the long-range future, if reported plans for expansion are to be accepted as evidence. An official of the Finnish Cellulose Association has observed that, despite recent weaknesses in the world market, almost all of the producers are thinking of increasing their capacity. Most of the new equipment would produce kraft pulp. There are also plans for paper capacity expansion.

According to the Finnish Cellulose Association, nine of twenty-six mills in Finland have definite plans to increase their capacities by a total of 382,000 metric tons. Total capacity for the twenty-six mills would thus reach 2,729,000 tons, compared to a present capacity of 2,347,000. These plans have speculative facets however, not the least of which is financing, and it is not assured when all will be carried out, if at all.

There are also reports that a medium-sized mill plans the purchase of a newsprint machine which will increase its annual capacity from 30,000 to 110,000 metric tons by 1961, with another 80,000 ton machine under consideration for 1964.

As to the short-range future, Finnish producers are said to be much less optimistic. It is apparently widely accepted that capacity will exceed demand for newsprint and most other products for the next two or four years. They plan, however, to be prepared when demand catches up with output, estimated to be 1962.

More Mills for Sweden

The Swedish pulp industry also is generally optimistic about the future, particularly the long-range market outlook for wood pulp, as evidenced by its plan to go ahead with several plant expansions and modernization projects.

The Government-owned AB Stations Skogsindustries is reported to be seeking an expansion of its pulp and paper-making facilities at Pitea and Karlsborg Bruk. Plans provide for building of new facilities at Pitea to produce about 79,000 metric tons of kraft pulp and 31,000 of semi-chemical pulp, and for an additional 60,000 of capacity at the Karlsborg Bruk.

Now going into operation is the new mill of the Skogsagarnas Cellulosa AB at Monasteras. Claimed to be the most modern in Sweden, it was designed for an annual capacity of 70,000 metric tons. It was expected to operate at 50 per cent of capacity at the end of 1958, and to be in full operation by spring.

Rest of Europe Waiting

The producers of Europe, outside of Scandinavia, may be reserving judgment on the wisdom of expansion until the effects of the implementation of the European Economic Community can be observed. The renascent West German industry has plans for the future which will overcome its production shortcomings by 1963, seven years sooner than originally planned. From the standpoint of paper production, the most important single new unit is one at Schwedt-Oder, expected to be ready by 1961, scheduled to produce 200 metric tons of newsprint and 100 tons of paperboard per day, with further increased output by 1964.

Round the World

In New Zealand, according to the annual report of the Director of Forestry, March 1958, it is planned to push newsprint output up to 90,000 long tons a year, then to double it by the early installation of a second machine.

Expansion is planned by a mill in Israel to cost over $10 million, including construction of a pulp mill and enlargement of paper-making facilities. An Export-Import Bank credit of $3 million will assist in financing purchases of manufacturing equipment in the United States.

In Latin America, too, there are plans for expansion. Mexico, ever seeking ways to halt the drain on foreign exchange, anticipates opening two new newsprint mills with a combined capacity of 70,000 metric tons, with plans for additional new pulp and paper mills in the future. The first mill to operate in the Dominican Republic will produce kraft paper and board, utilizing waste paper and imported pulp, and will find its market locally, as there are already four box and bag plants in operation. In Brazil, a new mill is nearing completion at Parintins, State of Amazons, and another is planned at Belem, Para.

From "Pulp, Paper and Board Industry Report" December 1958, of the U. S. Department of Commerce.

Diamond Gardner Reaches Toward 'Whole Log' Utilization

New integrated plant produces lumber and lumber products as well as a wide variety of molded pulp items from sawmill waste

Peak production is expected to be reached at the new $25,000,000 Diamond Gardner Integrated Forest Products Center at Red Bluff, Calif., before the spring of 1959. By peak production is meant 30,000 tons a year of such molded pulp products as egg cartons, Foodtainers, picnic and duplex plates; as well as 90,000,000 board feet a year of rough and finished lumber. The IFPC will then employ 700 men and women with a $3,000,000 annual payroll. As such, it will become a major factor in the corporation's national sales volume of $170,000,000 a year (as contrasted to $75,000,000 only a decade ago).

The giant plant occupies 400 acres on the banks of the Sacramento river, within easy hauling distance of the company's 220,000 acres of nearby timberlands, containing some two billion board feet of lumber. The plant is integrated in an effort to utilize the whole log, eliminating waste and preserving timber resources. While the industry norm for log utilization is only about 50 per cent, at the IFPC it is between 75 and 85 per cent, thanks to a high degree of automation and custom-designed machinery. Actually, nothing is wasted, since what-ever usable product does not go into lumber manufacture becomes the basic ingredient for molded pulp production. Screenings, bark and sawdust are utilized to feed the steam boilers.

Flow sheet by W. N. Perry, staff artist.

Bundling Triples Log Pond Capacity

Logs are received at the edge of a 42-acre log pond with storage capacity of 33 million board feet. Trucks and railroad gondolas are unloaded side by side beneath a 50-ton Ederer bridge crane. Chained loads are picked up as a unit and scaled to determine board footage. A log haul at the end of a 46-foot breakdown deck hustles logs down a 208-foot conveyor past five separate species bays. With an air kicker, an op-

Diamond Gardner officials, D. A. Hunter, Harold Crane, Ralph W. George and Colin Gardner III view important graphic panel control center.

TO MOULDED PRODUCTS
LOOP CONVEYOR
PRIMARY REFINERS
CENTRI-CLEANERS
DECKERS
BLEACHED & THICKENED STOCK CHEST
SURGE BIN
ROTARY SCREENS
DEWATERING SCREEN
REJECT REFINER
STUFF BOX
ACCEPTED STOCK CHEST
LOOP CONVEYOR
PRESSAFINERS
ELEVATOR
BUCKET
LOOP CONVEYOR
RETENTION CHEST
STEAM MIXER
CONSIS. REG.
BLEACH CHEMICAL
SECONDARY REFINERS
REFINED STOCK CHEST
RAPID CYCLE DIGESTORS
RAPID CYCLE DIGESTOR
LIVE BOTTOM BIN
CONVEYOR
REJECTER CONVEYOR
CHIP BIN
PLATE FEEDER

erator bumps the logs off the line into the appropriate bays. Thus pre-sorting takes place before the logs even enter the pond. When bundles of about 8,000 board feet accumulate in each bay they are steel strapped at two ends, spilled into the pond and pushed out by a power boat. Bundling logs is said to triple the pond's capacity.

At the sawmill across the pond, bundles of up to 50 tons each are hoisted 35 feet to the deck by a vertical lift, which occupies much less space than a bull chain. Logs are then debundled and go through a Nicholson Manufacturing Co. mechanical roto-barker. Following the debarking operation logs from 6 inches to 6 feet in diameter are bucked into lengths varying from 20 feet on down by a Spear & Jackson 108-inch deck saw.

Production is guided through three double-cutting headrigs and through the balance of lumber manufacture by a system of 27 GE motor control centers with cascade controls. Enough lumber—300,000 board feet—is produced every working day to build 30 average-sized homes.

Steam demands throughout the plant for power and heat are met by a powerhouse with three Riley steam generating units. Burning bark and sawdust to supplement gas, the boilers produce steam at 300 psi. A Diamond hog grinds bark from the sawmill and sends it by conveyor to the powerhouse. Bark and sawdust enter from the mill on a chain conveyor running the length of the powerhouse.

Chipping Operation

Chips for the pulping operation are produced from lumber mill waste in a separate building by two Sumner 66-inch chippers which have been adapted to cut mill trim, slabs, ends and edgings. Chip size is about ½ to ¾-inch across and ⅛-inch thick. Species used in pulp production are Ponderosa and sugar pine and white fir.

Via Link Belt elevator, chips go through a Rotex screen and into a Rader two-way pneumatic conveyor, which shoots chips to the pulp mill chip pile or through another double gate to car loading or the fuel-pile. Two Rens metal detectors are used in the chipper building. At the chip pile, a bulldozer moves chips into a drag conveyor for hoisting up into a surge bin. Utilizing two Stephens-Adamson chip feeders, chips then are blown through a 12-inch surface pipe to two chip silos of eight hours storage capacity. From here chips are transported to the digesters by a Redler type conveyor.

Overall view of refiner area where primary and secondary refiners are located for the groundwood-from-softwood chips process.

Rapid-Cycle Digesters

The pulp mill is geared to a production cycle of 75 tons a day. Staff over a 24-hour work day totals only 12 persons. The pulp mill operates almost entirely with Bauer equipment.

Initial step in pulp manufacture is loading of chips into two Bauer rapid-cycle digesters. The digesters, each of 200 cu. ft. capacity, are filled with 120°-140° water, and the hydrostatic pressure is brought up by pump to 250-275 p.s.i. After a short retention period, steam pressure is used to remove water into a live-bottom bin with three 12-inch stainless steel screw conveyors. The main purpose of this procedure is to give chips a uniform moisture content for refining conditions.

The screw conveyors carry chips first to two Bauer No. 516 Pressafiners which remove moisture and macerate them; then to three primary Bauer No. 411 refiners and next to four secondary refiners of the same type. The refiners are powered by 400 h.p. motors. An additional refiner handles rejects from screens and stock cleaners to be fed back into the system.

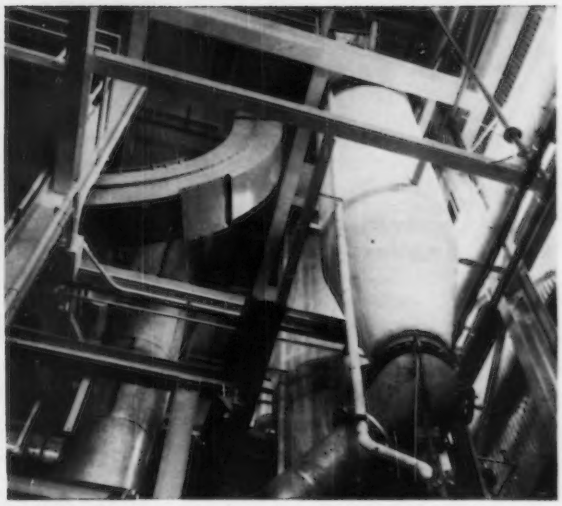
Pulp from the secondary refiners drops into a refined stock chest and then goes to a retention chest where approximately two per cent of a bleach agent, sodium hydrosulphite, is added. From this chest, the stock is pumped to a cleaning section comprised of two Impco screens and a bank of Bauer cleaners. There are twenty eight primary cleaners, four secondaries, two tertiaries, and one fourth stage unit. Accepted stock from the primary and secondary stages goes to Impco thickeners and then is delivered to the molded pulp center on demand. Pulp comes into the thickeners at about one-half per cent consistency and leaves at four per cent.

Molded Pulp Products

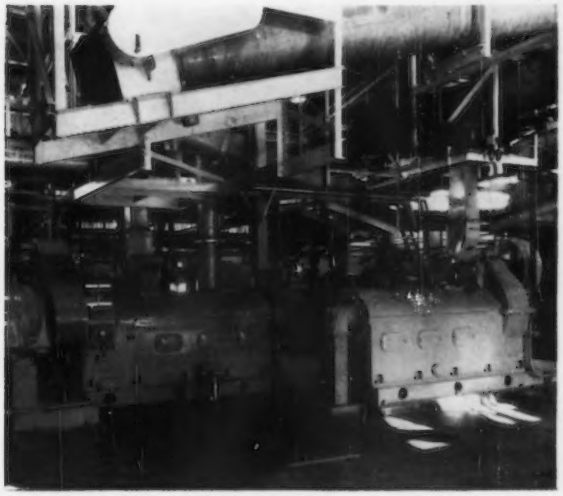
In the molded pulp products plant there are 20 tiled stock chests for fiber storage, ranging in capacity from one to five tons. Stock at this point is split into two major channels of production, one for egg cartons and the other for plain and duplex molded items. In addition to this virgin pulp, waste paper furnish is also used to produce egg cartons. Hydrapulpers, screens, thickener and refiners are located here to process the waste paper. Equipment in the molded products plant is largely of Diamond Gardner's own design, and was manufactured by their facility at Barberton, Ohio.

Actual manufacture of egg cartons begins as the stock is fed into three vacuum molding machines. The wet preforms pass through horizontal gas-heated ovens for 20 minutes, re-

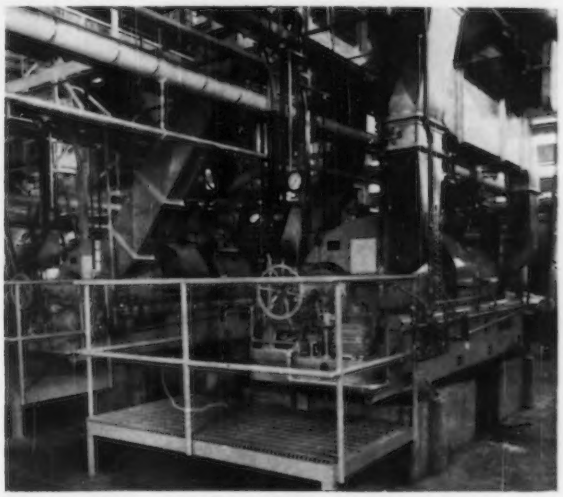
Chips are conveyed to surge bin, then blown to pulp mill.



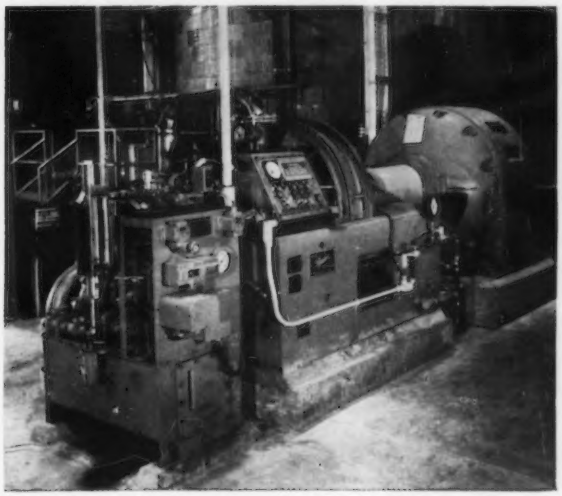
Rapid-cycle digesters give chips uniform moisture content.



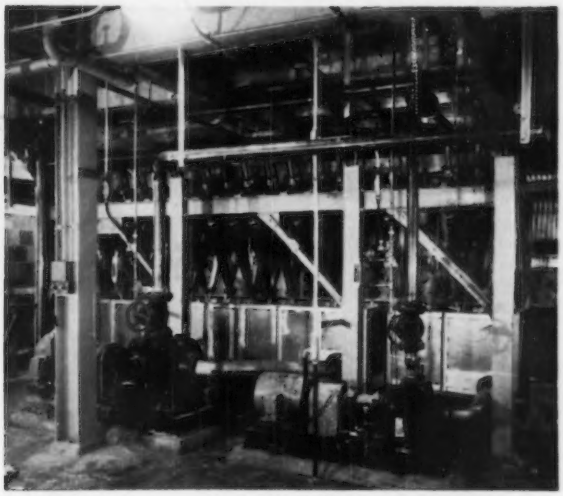
Pressafiners for moisture extraction and primary fiberizing.



Primary refiners each handle 25-30 tons per day.

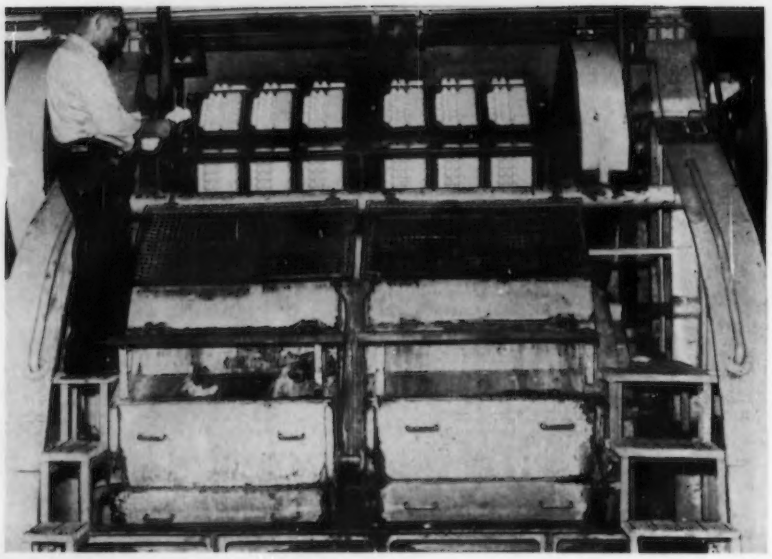


Pump-through refiners used in final refining stages.

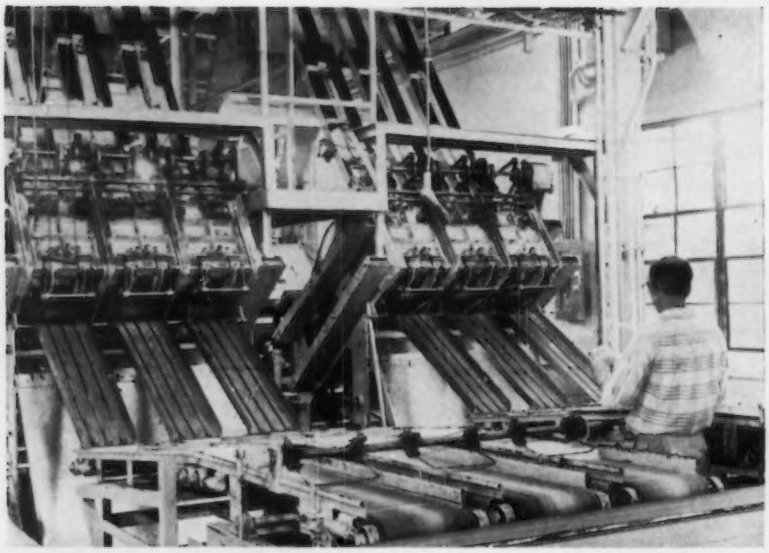


Stock cleaners remove dirt and foreign material.

At right, workman checks sample on wet-end of egg carton line.



Below, these dry presses give egg cartons a better printing surface.



Above, Foodtainer machines at dry end of plain molded section.

Left, battery of these machines mold duplex plates.

ducing moisture content to approximately 10 per cent. Coming off the drying chain, they enter drying presses which apply a surface suitable for printing to the surface of the egg cartons. Customer and brand names are then automatically printed in one or two colors by the letterpress method on a series of six Young printing presses. Finished cartons are counted and stacked automatically and bundled in packages of 250 each.

On the Foodtainer and plain plate line, wet end pulp stock is pumped from the pulp mill into vats and picked up on dies by vacuum. Two Nash Hy Tor vacuum pumps driven by 600 h.p. GE motor are used. Items are formed on a bank of six Foodtainer machines and steam-heated drier. Following this they are allowed to air-cool.

Picnic and pie plates and DG's own Foodtainers, widely used by supermarkets for packaging of fresh meat and produce, are machine-counted and packed in bags. They are cartoned for shipment on a Standard-Knapp automatic sealer which glues top and bottom flaps, folds them in and presses them down.

The company's duplex plates are molded of two pulps by the duplex process. The white liner is a highly-bleached-sulphite fiber overlay. Formed on duplex molding drums the products pass to a bank of four "merry-go-round" driers at 5,000 pounds pressure and 350-degree temperature in male and female molds. After stacking the duplex plates are cellophane-wrapped on two Wrap King machines.

Modern Effluent Disposal System

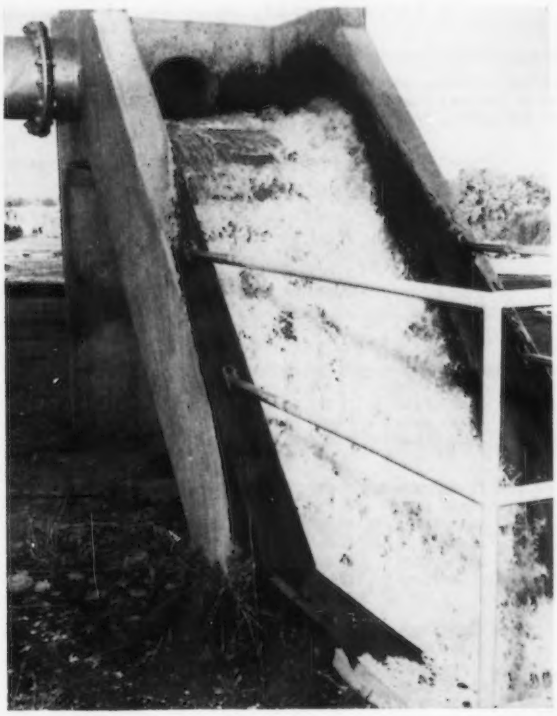
At the Red Bluff installation a major portion of the water used in the mill is recovered through clarification processes. All water effluent from the various manufacturing buildings is drained to a central point and sent through a Dorr-Oliver clarifying system. Previous to clarification, quantities of lime and alum are added to assist in precipitation of solid matter. The sludge, consisting of 2 per cent solids and 98 per cent water from the clarifier, then is pumped to a vacuum filter.

The exterior of the vacuum drum is coated with diatomaceous earth which filters clear water from the sludge. The water is then sent on to the log pond or to the settling ponds, together with the major portion of clear water from the clarifier.

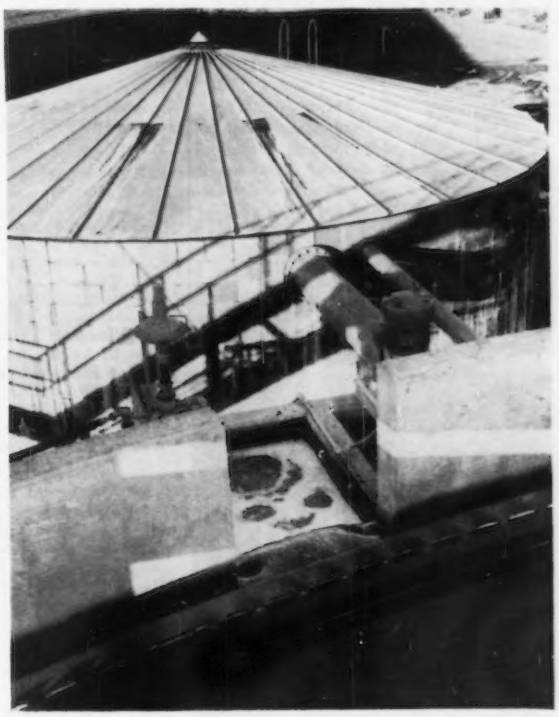
Because of the size of the log pond considerable evaporation takes place. During the hot summer season DG's engineers estimate that the 42-acre expanse of water loses approximately 300 g.p.m. or 432,000 gallons each 24 hours.

All water which cannot be re-used in the manufacturing process or in the log pond is pumped to the extensive settling ponds and to the percolation ponds. There it is dissipated through evaporation or by percolation through the heavy gravel strata which the company discovered at the south boundary of the Red Bluff property. These ponds cover about 25 acres and can easily handle the full flow of effluent. Water pumped to the settling and percolation ponds contains almost no suspended material. Tests indicate the ponds are able to accept 3,000 gpm.

John Penn of the company's research and engineering center at Stamford, Conn., who was responsible for engineering the effluent system, states that it will deliver "clear" effluent to the Sacramento river only during unusual flow conditions, but never untreated effluent.



Aerating falls freshen clarified water going to percolating pond.



View of clarifier shows outflow into tank below.

CHAS. T. MAIN, INC.
ENGINEERS

Process Studies, Design, Specifications and Construction Supervision

PULP AND PAPER MILLS

Steam, Hydraulic and Electrical Engineering Reports, Consultation and Valuations

80 Federal Street Boston 10, Mass.

Design · Construction · Modernization

THE RUST ENGINEERING CO.

930 FORT DUQUESNE BLVD.
PITTSBURGH 22, PA.

BIRMINGHAM NEW YORK

Stadler Hurter
International Ltd.

Engineers • Designers • Consultants

Specializing since 1923 in all phases of design, modernization and expansion of pulp and paper mills from forest to finished product.

1501 ST. CATHERINE ST. W.
MONTREAL

NEW YORK • MEXICO CITY • PARIS • ZURICH

Serving Timber Industry since 1910

Timber Estimators and Foresters

C. D. SHY & COMPANY

1130 Commerce Title Building
Memphis 3, Tennessee

PRICES OF FIBERS

MARKET WOOD PULP

FIRST QUARTER CONTRACT PRICES PER SHORT AIR-DRY TON

Delivered Basis

	U.S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$ 82.50/ 90.00	$ 82.50/ 90.00	$$90.00/ —	$$80.00/ —	$$90.00/ —
Bleached Gw'd	$ 97.50/100.00	$ 97.50/100.00			
Kraft, Blchd.	157.00/ —	160.00/162.50	$157.00/162.50*		$157.50/ —
Kraft, Blchd. Hdwd.	152.00/ —		$137.00/ —		
Kraft, Semi-bleached	140.00/ —	140.00/ —			
Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		134.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

‡ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances

COTTON LINTERS

F.O.B. OIL MILLS
WEEK ENDED DEC. 9

	Atlanta	Memphis	Dallas	Los Angeles
Grade 1	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	$8.75/7.50	7.50/7.25
3	$8.00/7.00	$7.75/6.00	7.25/6.75	7.00/6.75
4	7.00/5.75	5.75/5.50	6.25/5.75	6.50/6.00
5	5.75/5.00	5.00/4.75	5.50/5.00	5.50/5.00
6	5.00/4.00	4.25/4.00	4.50/4.25	4.50/4.00
7	4.00/3.00	3.50/3.25	4.00/3.00	3.00/2.50

WASTE PAPER MARKET

Mill Prices, f.o.b. Trucks Shipping Point — Includes Brokerage

These quotations are a partial indication of the price range on volume tonnage in each market on the date specified, as gathered from major dealers and brokers. SPECIAL PACKINGS AND SPOT TONNAGE NOT INCLUDED. Prices nominal.

	New York	Boston	Chicago	Los Angeles
	Dec. 29	Dec. 29	Dec.	Dec.
No. 1 Mixed Paper	$10.00/ 11.00	8.00/ 10.00	9.00/ —	14.00/ 15.00
No. 1 News	14.00/ 15.00	15.00/ —	22.00/ —	17.00/ 18.00
Overissue News (Lg. size)	16.00/ 18.00	12.00/ 14.00	25.00/ —	22.00/ —
Mill Wrappers	19.00/ 22.00	13.00/ 15.00	12.00/ —	15.00/ —
Old Corrugated Containers	24.00/ 25.00	23.50/ 24.00	25.00/ —	25.00/ —
Super Resorted Kraft Paper	35.00/ 40.00	35.00/ 40.00	35.00/ —	55.00/ 57.50
New Double Kr. Ld. Corr. Cuts	35.00/ 37.50	37.50/ —	37.50/ —	35.00/ 37.00
(Semi-chem. medium)	47.50/ 50.00	45.00/ 50.00	45.00/ 50.00	35.00/ 36.00
New 100% Kraft Corr. Cuts	40.00/ 42.50	50.00/ 55.00	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ 57.00
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ 58.00
New Br. Kr. Bag Waste Unprintd	60.00/ 65.00	65.00/ 75.00	62.50/ —	58.00/ 60.00
No. 1 Groundwood Shvs.	25.00/ 30.00	22.50/ 27.50	22.00/ —	35.00/ 42.00
White Newsblanks	60.00/ 65.00	50.00/ 57.50	45.00/ —	55.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	55.00/ —	67.00/ 70.00
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	65.00/ —	— / —
Hd. White Shvs.	90.00/ 95.00	95.00/105.00	85.00/ —	95.00/ 97.00
Hd. White Env. Cuts	105.00/110.00	110.00/115.00	90.00/ —	113.00/ —
Col. Tab. Cards	55.00/ 60.00	60.00/ 67.00	52.50/ —	38.00/ 42.00
Manila Tab. Cards	75.00/ 80.00	75.00/ 85.00	75.00/ —	65.00/ —
No. 1 Col. Ledger	32.50/ 37.50	25.00/ 30.00	45.00/ —	29.00/ 35.00
White Ledger	60.00/ 62.50	57.50/ 62.50	57.50/ —	50.00/ 55.00
Mixed Book & Mag.†	20.00/ 23.00	18.00/ 20.00	14.50/ —	— / —
No. 1 Books‡	25.00/ 30.00	20.00/ 22.00	32.50/ —	14.50/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% of groundwood.

Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	Nov. 22	Nov. 29	Dec. 6	Dec. 13	Dec. 20
1958	91.7	86.5	92.7	90.6r	92.1
	Nov. 23	Nov. 30	Dec. 7	Dec. 14	Dec. 21
1957	92.7	87.0	91.1	91.3	92.0

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1958	86.9	89.5	89.5	88.4	86.4‡	86.2‡	76.0‡	89.8‡	86.7‡	91.4‡	90.3‡	—	—
1957	94.2	97.0	97.1	94.0	94.6	93.3	75.6	90.7	86.0	93.0	90.7	81.5	90.9

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1951	1952	1953	1954	1955	1956	1957	1958
Year to Date	99.6	90.7	93.7	92.3	95.9	98.5	91.1	87.0
Year Average	98.0	88.6	92.3	91.6	94.0	97.9	90.9	

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	Nov. 22	Nov. 29	Dec. 6	Dec. 13	Dec. 20
1958	94	88	84	94	91
	Nov. 23	Nov. 30	Dec. 7	Dec. 14	Dec. 21
1957	94	86	84	92	93

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1958	80	86	88	84	84	86	76	93	90	95	92	—	—
1957	91	94	94	92	93	91	73	94	91	97	92	79	90

† *Percents of operation based on "Inch-Hours" reported on a 6-day basis.*

SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Dec. 20, 1958	LAST WEEK ENDING Dec. 13, 1958	CUMULATIVE TO DATE Jan. 1 to Dec. 20, 1958
TOTAL	295,919	309,537	13,955,786
Liner	95,120	107,941	4,698,417
Corrugating Material	45,783	46,994	2,115,318
Chip & Filler Board	5,110	5,383	244,582
Total Containerboard	146,013	160,318	7,058,317
Folding	57,328	56,134	2,640,975
Set-up	10,375	10,306	554,118
Special Food Board	28,333	28,705	1,286,205
Other	53,870	54,074	2,416,171
Total Boxboard	149,906	149,219	6,897,469
TOTAL ORDERS			
Received	255,176	275,370	
Unfilled End of Week	364,444	403,401	

Alvin H. Johnson & Co.

INCORPORATED

Consulting and Designing Paper Mill Engineers

415 LEXINGTON AVENUE NEW YORK 17, N. Y.

PAPER MILL DESIGN PROCESS ENGINEERING POWER PLANTS

STRUCTURAL AND ARCHITECTURAL DESIGN

REPORTS APPRAISALS ESTIMATES AND SURVEYS

OBITUARIES

Gaylord Beason, 45, executive vice-president and general manager of Sutherland Paper Co.'s Fort Orange subsidiary, died December 12, following a heart attack.

Mr. Beason had been an employee of Sutherland since 1933.

Jay K. Smith, president of the J. and F. B. Garrett Paper Co., Syracuse, N. Y., for the past 50 years, died at his home Dec. 22.

Clarence Kronquist, 60, superintendent at the Marinette Paper Co., died Dec. 21.

He was an employe of the paper company for 40 years.

Bartholomew Sproule, 32, a pioneer Canadian paper box manufacturer, died Dec. 18 in Toronto, Ont. He founded the firm of Collett, Sproule Ltd. more than 50 years ago with the late E. B. Collett. He was in the paper box business earlier with his own firm.

Nat E. Heit, president of Angel Soft Tissue Mills, Inc., died December 12, 1958 in New York City.

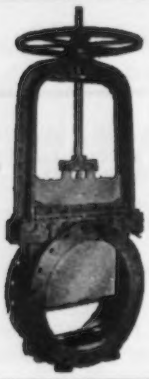
NEW MICROMETER graduated in ONE-TENTH of ONE-THOUSANDTH of an inch

for fine calipering of Thin Materials

This precision instrument gives direct-reading thickness measurements of Papers, Tissues, Plastic Films, Foils . . . any sheet stock up to .050" thick. P.S.I. pressure meets ASTM and TAPPI Standards. Write for complete data and prices for this and other Cady Instruments.

Burst Testers • Micrometers
Basis Weight Scales

E. J. CADY & COMPANY
MANUFACTURERS
676 N. Harlem Av., River Forest, Ill.



RECORD PAPER & PULP STOCK VALVES "BONNETLESS" SELF CLEARING---"RESIDUE POCKETLESS TYPE"

METALS — I.B.B.M. oil iron, bronze or stainless steels, body parts plain or rubber lined.

The photo of 24" Fig. 241 I. B. B. M. valve while illustrating the gate bottom wedge system for forced gate seating and "GUILLOTINE" edge for shearing fibre at seat also shows the packing box and yoke as separate units. Both adjustable.

- The "FAST THREADED" screw stem and ball bearing speeds valve operation.
- The packing box is extra deep, is adjustable and provided with specialized lubricated packings and special type gland and compression bolts.
- The yoke mountings are such that yokes for various methods of gate operation are interchangeable.
- Replaceable gate edge shoes are used in valves 10" and larger. These shoes are of special value when valves are installed stem and pipe horizontal.

"RECORD PRODUCTS EXTENSIVELY USED IN DEFENSE PROJECTS"

RECORD FOUNDRY & MACHINE COMPANY

LIVERMORE FALLS, MAINE, U. S. A.

WOOD'S DUCTILE IRON PULLEYS INCREASE SCOTT'S MACHINE DRIVE SPEED POTENTIAL 50%

Split taper-cone pulleys of ductile iron, designed and manufactured by Wood's, have solved for Scott Paper Company the age-old problem of how to speed up flat belt drives. These new pulleys operate at rim speeds up to 9000 fpm (calculated allowable speeds up to 14,000 fpm), a 50% increase in speed over previously used, cast iron types. Pulleys are but one of the many, money-saving applications of this remarkable metal. Look into its advantages.

WRITE FOR YOUR COPIES OF "DUCTILE IRON" AND "A CASE FOR DUCTILE IRON ECONOMY."

T. B. WOOD'S SONS COMPANY

CHAMBERSBURG, PENNSYLVANIA

ATLANTA • CAMBRIDGE • CHICAGO • CLEVELAND • DALLAS • NEWARK

Jordan Shell and Plug Fillings

TRADE-MARK

POSITIVE

Reg. U. S. Pat. Off.

High Speed Disc Refiner

THE BAHR BROTHERS MFG. CO.

MARION, INDIANA, U. S. A.

PRACTICAL PAPER TECHNOLOGY

by William Bond Wheelwright

This book begins with a survey of "Progress in the Paper Industry" and ends with a list of books recommended for collateral reading. The intermediate chapters are entitled: "How to Judge Paper"; "Physical Aspects of Paper"; "Practical Manual and Visual Tests"; "Essential Facts About Papermaking"; "Coated, Glazed and Specialty Papers"; "Permanence of Paper"; "Paper Difficulties in Converting"; "Paper as a Medium for Printing"; "Letterpress Printing"; "Offset Lithography"; "Intaglio Processes."

Also a Supplement containing a Quiz Test on paper.

Practical Paper Technology, Price $1.75

Foreign Delivery—25c extra

Remittance with order

Lockwood Trade Journal Co., Inc.

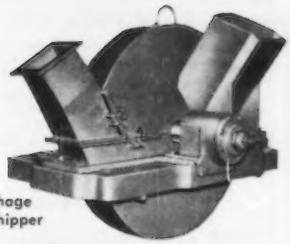
49 WEST 45th ST. NEW YORK 36, N. Y.

Knox Felts

KNOX WOOLEN COMPANY

CAMDEN, MAINE

America's First Manufacturer of Endless Paper Machine Felts

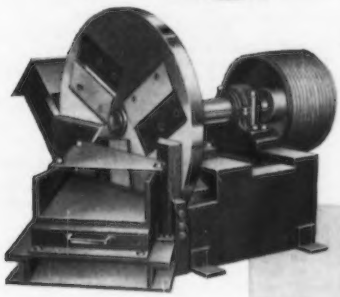


Carthage
47" Chipper

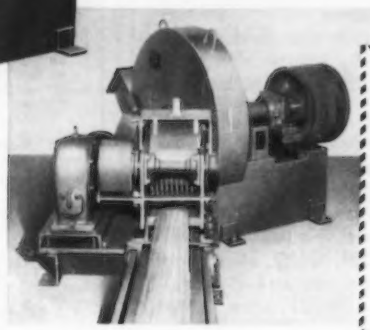
There's *REAL PROFIT* in Chipping Sawmill Waste Wood with *CARTHAGE CHIPPERS*

More and more of the chips now being supplied to pulp mills are coming from sawmill waste wood. Remember, it costs real money to dispose of this waste by burning. Convert this expense into a clear profit by chipping your slabs, edgings and end trim with Carthage Slab Chippers.

Get the details on the most complete line of slab chippers offered by any company.



Carthage 39" Chipper
Horizontal Feed



Carthage 39" Chipper
Power Feed

SEND THE COUPON TODAY

CARTHAGE MACHINE CO.
CARTHAGE, NEW YORK

Please send full information on Carthage Chippers for chipping sawmill waste, including Slab Chipper Data B-4817.

Name .....

Firm .....

St. or Rd. .....

City ..... *Zone* .... *State* .....

E

The First Complete Book In Its Field...

PULP AND PAPER MILL INSTRUMENTATION

By filling in and mailing the handy coupon today, you will be among the very first to benefit by this practical hard-bound volume.

In 117 large 7" x 10" pages, with dozens of charts, diagrams and tables, PULP AND PAPER MILL INSTRUMENTATION brings you full details on instruments for your mill, their selection, their use, and their maintenance.

Contents Include:

Measurement of Process Variables
Principles of Automatic Control
Kamyr Continuous Kraft Pulping
High Yield Sulphite Pulping
Chemi-Groundwood Mill
Automatic Reduction and Handling of Instrument Data
Paper and Board Mills
Kraft Pulp Mills
Sulphite Pulp Mills
Continuous Semi-Chemical Pulping
. . . and much more!

Be sure you get a first edition copy of this practical volume by E. J. Cole and M. Todd. Add PULP AND PAPER MILL INSTRUMENTATION to your bookshelf today.

LOCKWOOD TRADE JOURNAL COMPANY, INC.
49 West 45th Street, New York 36, N. Y.

Yes, rush me post-paid a First Edition copy of your just-published book, PULP AND PAPER MILL INSTRUMENTATION at $3.50.

☐ Payment Enclosed

Name ..... Title .....

Company .....

Address .....

City ..... Zone ..... State .....

PAPER TRADE JOURNAL CLEARING HOUSE

Help Wanted

PAPER MEN

$5,000 to $50,000

SALES • PRODUCTION • TECHNICAL

Finding and landing **THE ONE BEST JOB** requires sound analysis, careful planning, proper contacts and skillful negotiation. Paper men ourselves, and the only specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing **THE SPECIFIC SITUATION** that most exactly fits the needs of each individual we serve. If you seek to better yourself, and your performance to date entitles you to our endorsement, we can and will help you. Contact us in absolute confidence for information regarding procedure.

GEO. M. SUNDAY & ASSO.

PAPER PERSONNEL CONSULTANTS

6 E. Monroe Chicago ANdover 3-1970

WANTED

TWO INDUSTRIAL GRADUATE ELECTRICAL ENGINEERS TO WORK UNDER CHIEF ELECTRICAL ENGINEER IN LARGE PULP AND PAPER MILL. YOUNG MEN WITH SOME EXPERIENCE IN AC AND DC ROTATING MACHINES AND CONTROL, SECTIONAL PAPER MACHINE DRIVES, MERCURY ARC RECTIFIERS AND ELECTRONICS CONTROL. SALARY OPEN. ADDRESS BOX 58-335 CARE PAPER TRADE JOURNAL

J-19

ENGINEERS

Excellent career opportunities for graduate mechanical engineers at our International Falls, Minnesota plant. Two to five years experience in paper mill or related work desirable. These positions also offer extensive medical coverage, a retirement program and life insurance benefits all paid for by the company.

Your reply giving personal, educational and work backgrounds will be kept in strict confidence.

Write Don Lindert, Minnesota and Ontario Paper Co., 500 Investors Bldg., Minneapolis 2, Minn. J-5

CHEMIST or CHEMICAL ENGINEER

3-5 years' experience in bleached kraft and/or specialty paper mill for an Ontario integrated bleach kraft pulp and paper mill. Involves work in mill control and/or process control and development. Please furnish complete particulars as to age, experience, marital status, references, salary to: Box 59-3, care Paper Trade Journal.

J-19

Help Wanted

WANTED

Recent graduate with science or engineering degree and few years experience in paper industry. We present a challenging opportunity to work with all phases of paper manufacture and conversion. As part of the research team of a leading supplier to the industry, the man who fills this newly created position will evaluate new products, supervise field testing and generally advise with management with respect to his field.

If you have a feel for the needs of the paper industry and would like to apply your ingenuity and imagineering in an Eastern laboratory write us in strictest confidence. Please give full details and desires in first letter, so that an interview may be arranged. Address Box 58-321 care Paper Trade Journal. J-5

PAPER CONVERTING MACHINERY DESIGNER

Wanted by manufacturer of paper and film bag machinery and printing presses.

Located in pleasant New Jersey community.

Degree not necessary—only the ability and practical background for independent design of converting machinery.

Excellent opportunity for capable man. Salary open.

Please send resume of experience. Box 58-13 care Paper Trade Journal.

TF

Converting Machinery Salesman to eventually assume Sales Managers responsibilities. Engineering background desirable. Established Paper Bag Machinery line, with possibilities of Automatic Packaging Machinery to be added. H. G. Weber & Co., Inc., Kiel, Wisconsin. J-12

POWER HOUSE FOREMAN needed by progressive Paper Mill in northern half of the lower penninsula of Michigan. Write giving resume, education, experience and salary requirements to Box 59-6 care Paper Trade Journal. J-12.

SALES REPRESENTATIVE—Pulp and Paper Mill Equipment. Locate in New York. Age 25 to 35. Submit complete resume including salary expected. Address Box 59-10 care Paper Trade Journal. J-12

GIBBS-BROWER CO., INC.

10 Depot Plaza, White Plains, New York
Telephone—Rockwell 1-1130

Mid-West Branch:
400 Washington Building
Madison 3, Wisconsin

West Coast Branch:
5270 East Washington Blvd.
Los Angeles 22, Calif.

Canadian Branch:
903 Danforth Place
Burlington, Ontario

HAVE AVAILABLE:

PRINTING PRESSES

1—65" 6-Color Kidder Master Anilinar
1—54" 1-color Rotogravure Press
1—49" 1-color Rotogravure Press
1—42" 4 color Kidder Std. Anilinar.
1—40" 4-color Hudson Sharp Flexo. Roll to Sheets
1—40" 3-color Kohlback Flexo Press
1—5 color P.W. Wolverine Hydro Press
1—36" 4 color Schmutz Hand-Fed Bag Press
1—36" 2 color Champlain Gravure Press
1—36" 5 color Koenig & Bauer Rotogravure
1—30" 4 color Hudson Sharp Flexographic Press
1—24" 5 color Kidder Colloprinter
1—24" 3-color Rotogravure Press
1—18" 2 color Potdevin (Model - 217) Roll to Roll Press
2—9" x 12" & 1—12" x 12" New Era Presses

TAILPRINTERS

1—30" 5-color Gregg Flexo Press
1—16" 2-color Potdevin.

POWER PAPER CUTTERS

Seybolds: 1—44" late model Seybold Model P4460 New 1952
Precision: 40", 50", 57" & 64"; 10Z: 40", 57" & 65"; 20th Century: 45", 54" & 60"; Dayton (6Z): 35", 40" & 84"; Holyoke: 65"; Sheridan: 36" new model, 55"; Oswegos: 38" & 44" & 34", 54" Heavy Duty; Lawson: 52" Auto Space & 52" Standard.

CAMACHINES

1—72" 26-3A Cameron
1—72"—10-04 8 Shear Cut.
1—66" & 2—52" 9-5.
1—62" 10-10
1—62" 26-2A with 100 score cutting units
1—62"—40—1—AF
1—52", & 1—42", Model 24-7.
1—42" Type 9-5-A Roller Bearing 1500 fpm.
1—42" Cameron 26-7M Duplex
1—42", 1—52" and 2—62" Type 6

OTHER SLITTERS

1—82" Langston Type—B
1—60" Langston Type A.
1—50" Kidder Junior Model Superspeed (IBM Type Tab Card Slitter)
1—45" Ruf Duplex Winder.
1—42" Kidder Merchant Model
30" Fales Model—B Slitter and Rewinder
2—24", 1—30", 1—36" & 1—40" Kidder S.L. Shear cut

MISCELLANEOUS MACHINES

1—46" Reverse Roll Coater
1—48" Hot Melt Coated and Laminator
1—40" and 1—48" Asphalt Laminators.
1—60" Hot Melt Coaters & laminators
1—90" Duplex Hamblet, Layboy and Back Stands
10—Hamblet Sheeters 32", 42", 45", 50", 62", 68", 72", 84", 90" and 104"
1—30" Peters Sheeter, Model UD.
1—45" Beck Auto-Piler
4—Schultz continuous roll winders. Two—12", One 18" and 1—48".
1—Potdevin Model 224 Garment Bag Machine, 2 color printing, large range.
1—Potdevin Model 72—C Cellophane satchel bottom bag machine
1—Potdevin Model 296 Duplex Coffee Bag Machine
1—Weber Model "CN" Cellophane Satchel Bottom Bag Machine
1—Simplex Model 4-7 Cellophane Bag Machine
Die Presses: 1—60" x 14" Seeley, 1—50" x 33" Sheridan, 2—37" x 18" Sheridans and 2—Hobbs Mfg. Co. 44" x 30" & 44" x 38"
1—9-roll Holyoke Super Calender with drive
3—Waldron Gummed Paper Breakers 50", 56" & 66"
1—Hayssen Model 5-9 Cellophane Wrapper
1—50" Hudson Sharp Embosser-tinter.
1—48" Unicraft Embosser
1—18" Waldron Embosser
1—30" Double Reverse Roll Coater
1—MD Knowlton Core Winder. Range ¾"-8" diameter
1—Vierengel Tin Tie Machine J-5

BEATERS
2—1500 lb. rag beaters, Valley Iron, bandless rolls, 54" x 48", cast iron tubs

CALENDER STACKS
1—3 roll 84" calender stack.
1—4 roll 72" Calender Stack. (Extra heavy duty).
1—5 roll 82" face.
1—5 roll 86".
1—7 roll, 84" face.

CHIPPERS
1—96" Murray 4 knife Chipper—anti-friction bearings.
1—84" 10 knife Carthage Chipper. Anti-friction bearings.
24—Chipper Knives 15⅞ x 8¼, 2 slot.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
1—Williams Hammermill

CYLINDER MOLDS
2—42" diameter x 106" face
8—36" diameter x 94" face, hollow shafts, Very good condition.
1—30" diameter x 72" face.
1—30" diameter x 92" face.
1—36" diameter x 84" face
2—36" dia. x 54" face.
3—36" diameter x 90" face, 18" diameter couch rolls.
1—60" dia. x 170" face.

DIGESTERS
1—Biggs 12' 6". (Globe)
1—10' high x 10' dia. High pressure vertical digester.

DISINTEGRATOR
1—Shartle 8" disintegrator (new) with 125 horsepower induction motor (totally enclosed)

DRIVES
1—Rice-Barton hypoid enclosed drive, 4 to 1 ratio.
1—#6 Reeves vertical—anti friction bearings, totally enclosed.
1—Sandy Hill right angle 50 H.P. (4.75 to 1).
1—Jones 21 H.P., ratio 10 to 1 (enclosed angle drive)
1—#4 Reeves Drive
2—Waterbury Hydraulic Variable speed line shaft drives (from 40 to 100 H.P.)
1—Beloit hypoid enclosed drive 60 h.p. 5 to 1 ratio.
1—5 H.P. Reliance Drive, complete with starting equipment, like new.
1—20 H. P. U. S. Varidrive
1—Agitator drive

DRYERS
1—28" diameter x 84" face
2—30" diameter x 40" face with bearings
2—30" diameter x 48" face with bearings.
4—48" dia. x 52" face with frames, gears, bearings
1—36" diameter x 44" face
3—36" diameter x 76" face.
5—36" diameter x 84" face, anti friction bearings and gears.
1—16" diameter x 54" face (steel)
6—48" diameter x 130" face.
2—Cooling Drums, bronze 36" x 128", with frames, gears & necessary rolls to make up the unit. (After dryers)
1—28" diameter x 98" face.
1—48" diameter x 90" face.

EMBOSSING CALENDERS
1—43" 3-Roll Embossing Calender.
1—62" 2 roll Embosser.

EXTRACTOR ROLLS
1—Extractor roll, 26" diameter x 104" face
1—Rice Barton & Fales, Extractor Roll, 26" diameter x 104" face

FELT ROLLS
50—Brass Felt Rolls, with Brass Journals, 72" face x 5" dia.

FLAT SCREENS
1—8 Plate "Packer"
1—12 Plate "Packer"
1—16 Plate "Packer" late type roller shoes.

HOGS
2—Mitts Merrill Type 15 C.F.

JORDANS
1—Noble & Wood Mammoth
1—Noble & Wood Monarch, Type D.

LABORATORY EQUIPMENT
1—Bauer-McNett Fibre Classifiner, monel tanks, complete with copper screen plates.
1—16" diameter x 24" face Laboratory High Pressure Dryer
1—Press Roll 6" diameter 24" Face, steam jacketted
1—2' Shartle Hydrapulper
2—8" x 8" Valley Sheet dryers
1—12" x 12" Valley Sheet dryer
1—6" diameter Hydraulic Press
1—Experimental Digester (High Pressure)
1—15 lb. E. D. Jones Beater
3—Jonsson Test Screens
1—8" x 8" Williams Sheet Mold
2—8" x 8" Valley Hydraulic Presses
1—Williams Smoothness and Formation Tester
1—6" Mayer Coater.
1—Clark Softness & Stiffness Tester
1—20" Dilts Wet Machine
1—Williams Centrifuge
1—10" Butterworth Padder.

LAMINATING MACHINES
2—84" Asphalt laminators.

MISCELLANEOUS
1—#1 Miami Selectrap

MOTORS
1—100 H.P. Westinghouse Motor, variable speed, 585 r.p.m.

PACKAGING MACHINE
1—Morpac Packaging Machine (Details on request).

PRESS ROLLS
2—Chilled iron, chrome plated 9" x 72"
1—Chilled iron, chrome plated 12" x 100"
1—Chilled iron, chrome plated 10" x 74"
8—sets (1 rubber, 1 chrome steel) 74" face x 15" dia., complete with bearings.

PRESS SECTIONS
2—Complete Press Sections with (frames, gears, bearings), 18" diameter x 90" face rolls (1 rubber, 1 bronze & 1 rubber, Stonite). Also 2 extra brand new rubber covered rolls.

PULPERS
4—Dyno-Pulpers

PUMP
1—Morris-10,000 g.p.m. 25 ft. head (all bronze)

REELS
1—86" 2 bowl reel.
1—84" 3 bowl revolving reel.
1—100" Rice Barton 2 bowl Reel, heavy duty.
1—123" 3 bowl Revolving Reel
1—134" 2 drum
1—72" Downingtown Reel, 2 bowl.

REFINERS
1—Dilts Classifiner, practically new
1—Rice Barton Dynofiner, details on request.
1—Dilts Hydrafiner, stainless steel filling, anti-friction bearings, excellent condition, including 125 h.p. motor
1—12" Wiener Refiner, with 200 h.p. motor

REGULATORS
1—Bird Consistency Regulator
1—Trimbey Consistency Regulator

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
1—#2A-50 Bird, copper vat.
2—APMEW Rotary Pulp Screens.

SAVEALLS
1—LaMorte, 48" diameter x 82" face cylinder mold.
2—Savealls, cylinder molds, 42" diameter x 106" face, brand new vats.

SCREEN PLATES
Bird Rotary screen plates.

SHEETER
1—132" Hamblet heavy duty duplex sheeter, anti-friction bearings throughout, including layboy and backstand.
1—84" Hamblet, duplex, back stands.

SHREDDER
1—16" "Swift" Paper Shredder

SLITTERS & WINDERS
1—32" Cameron Type 9
4—42" Cameron Type 6
1—42" Cameron Type 8
1—42" Cameron Type 26-2A
3—50" Cameron Type 6
1—52" Cameron Type 9
2—62" Cameron Type 6
1—62" Cameron Type 8
1—72" Cameron Type 9
1—84" Cameron Type 12
1—86" Two Drum Moore & White 50" diameter rewind.
1—96" 4 drum Moore & White winder
1—128" Beloit Shear cut winder, drive and variable speed motor.
1—102" Cameron Type 18, 60" diameter
1—122" Cameron Type 18, 60", anti friction bearings
1—136" Langston, 60" diameter

SLITTING DEVICE
84" Quick change slitting device shear cut, complete, practically new.

STEAM JOINTS
10—3" Johnson steam joints (new).

STOCK PUMP
1—10 x 20 Shartle Triplex

STRAINER
1—Elliott Twin Strainer, Type R

SUCTION COUCH SHELL
1—Downingtown suction couch shell only, 127½" face x 26" diameter

SUCTION COUCH ROLL
1—Beloit, 36" diameter x 246" face, SKF bearings.

SUCTION FELT ROLLS
1—Gilbert & Nash 122" face
1—Beloit Rubber Covered Suction Felt Roll 109 face x 20½" diameter.

SUCTION PRESS SHELL
1—14" diameter x 100" drilled face, suction Press Shell only.

SUPER CALENDER STACK
1—9 Roll 56"

TABLE ROLLS
22—Rubber Covered 10" diameter x 246" face
30—4" dia. x 130" face (will cut to size)

THICKENERS
2—Iron End Vats with 36" diameter x 84" face Cylinder Molds and 20" diameter couch rolls, including spare cylinder mold and spare couch roll, all anti friction bearing equipped.

TOILET WINDERS
2—72" Hudson-Sharp (Surface type winder)

TRIMMER
1—84" Seybold

VACUUM PUMPS
1—H-3 Nash Vacuum Pump
3—#1 Nash Hytor vacuum pumps
1—#7 Nash Hytor vacuum pump with 75 h.p. synchronous motor.
2—Connersville, 14 x 20
2—#3 Nash Hytor
1—#4 Nash, with motor
3—L-5 Nash Vacuum Pumps
1—L-6 Nash Vacuum Pump

VATS
2—D. J. Murray Co. Vats, iron ends, for 42" x 120" cylinder molds, overflow and counterflow.
2—Brand new Downingtown Iron End Vats, copper lined, for 42" diameter x 112" face cylinder molds. Will cut down to your size.

VIBRATING SCREENS
2—Hummer electric Vibrating Screens, stainless steel, new
1—Selectro 2 stage, 5 ft. x 10 ft.
1—36" x 48" Vibrating Screen

WEB GUIDE
1—110" Stanford Constant Tension Unit, air operated.

YANKEE DRYERS
1—140" face x 12' dia., anti-friction bearings & stands.
1—84" diameter x 56" face.

Paddy Ross, Pres. **J. J. ROSS COMPANY** Ben Kurs, Treas.
377 Frelinghuysen Ave.* Tel—Bigelow 3-3720 Newark 12, N. J.

Help Wanted

GENERAL SUPERINTENDENT

Groundwood specialty mill in Northeastern U.S.A. seeks competent General Superintendent. Must be experienced in all phases of groundwood specialties. Please submit detailed resume of experience, education and salary requirements. All replies held in strict confidence. Address Box 58-332 care Paper Trade Journal.

J-5

MACHINE TENDER

For Fourdrinier machine running towel and napkin grade paper in our Bloomfield, N. J. plant. Must be willing to work rotating shift. Reply promptly stating details of age, experience, and wages expected to Box 58-325 care Paper Trade Journal.

J-5

WANTED

Young recent graduate in science or engineering with a few years experience in pulp and paper manufacture for interesting job in New York City office. Replies treated in greatest confidence. Please write Box 58-267 Paper Trade Journal.

TF

WANTED

Plant Engineer experienced in steam, electricity, maintenance and construction for a two machine non-integrated mill located in Lake States. Please give full details. All replies will be held in confidence. Box 58-328 care Paper Trade Journal.

J-12

GENERAL MILL SUPERINTENDENT OR PRODUCTION MANAGER

With experience in fine Printing Papers and specialties—Middle Atlantic location—attractive salary—applications strictly confidential. Address Box 58-329 care Paper Trade Journal.

F-2

MASTER MECHANIC

2 machine news mill in Northeastern U.S.A. seeks competent Master Mechanic. Must be fully experienced. Send full data and past records to Box 58-330 care Paper Trade Journal. All replies held in strict confidence.

J-5

ELECTRICAL ENGINEER

2 machine news mill in Northeastern U.S.A. seeks competent Electrical Engineer. Must have minimum of 2 years experience. Send full data and past records to Box 58-331 care Paper Trade Journal. All replies held in strict confidence.

J-5

Situations Wanted

POSITION WANTED

Sales Representation and Technical Service available to manufacturers of Paper Mill Equipment, Raw Materials, or Supplies, by experienced mill operator and salesman. Address Box 59-2 care Paper Trade Journal.

J-5

Situations Wanted

SLITTING MACHINE OPERATOR—15 years experience. Seeks change. Address Box 59-7 care Paper Trade Journal. J-5

TECHNICAL GRADUATE—Seven years of technical sales service experience in the paper industry. Desires new position in either sales or sales service. Address Box 59-1 care Paper Trade Journal. J-12

SEEKING CONNECTION with aggressive company—20 years experience on cylinder machines, B.S. Degree—Technical and Production Supervision at management level. Presently employed in supervisory capacity. Address Box 59-5 care Paper Trade Journal. F-9

PAPER SALES-IMPORTING-EXPORTING—Coarse-fine papers. 6 years. Can assume responsibility. Manage department. Good sales record. Seek position with aggressive company. Address Box 59-8 care Paper Trade Journal. J-5

EXECUTIVE—Conversion of Boards and Papers. Currently Works Manager; desire change for challenging opportunity. Highly successful record in organization production and development. Address Box 59-9 care Paper Trade Journal. J-26

For Sale

FOR SALE

IMMEDIATE DELIVERY

LOCATED—PHILADELPHIA, PA.

1—90" Yankee Fourdrinier Machine. Equipped with Suction Press, Head Box, Voight Inlet.

1—6 Ft. Lukes Steel Yankee Dryer—150# Test.

1—5 Ft. Moore & White Yankee Dryer.
The above two dryers are fully equipped with doctors, Honeywell speed indicators and air cylinders with Foxboro controls. All rolls (felt & wire) equipped with A.F. Bearings. Direct Motor Drives. Excellent Condition.

2—Collators.

1—#1 Claflin Refiner.

1—75 KW MG Set with Controls.

2—Embossers.

3—Beaters.

2—Savealls.

Many other items, including pumps, motors, laboratory equipment, etc.

Write—Wire—Phone For Your Needs

RUDERMAN MACHINERY EXCHANGE
GOUVERNEUR, NEW YORK
Telephone 333-334

TF

READY DRESSED

MILL COGS

LABOR SAVING TIME SAVING

The most economical filling that can be put in a mortise wheel

QUICK SERVICE
ON ALL SIZES

Write for Instruction Sheet "G" which is free

THE N. P. BOWSHER CO.
SOUTH BEND, IND.

J-5

BARGAINS

IMMEDIATE DELIVERY

1—128" B & S 10-Roll Calender Stack. King Roll 24" Dia. Heavy box frames, full set of doctors. Excellent Condition.
1—86" Farrel 8-Roll Calender Stack. Anti-friction Bearings. Excellent Condition.
26—36" x 72" Complete Dryer Section, Stack, Drives, Etc.
10—48" x 150" Pusey & Jones Dryers.
1—84" Kamyr Machine, Complete. 75 ton per day output.
1—E. D. Jones Majestic Jordon No. A-482. New S.S. Fillings. Like New.
1—E. D. Jones Imperial Jordon, S.S. Fillings
1—Noble & Wood Mammoth Jr. Jordon, S.S. Fillings
1—Monarch Jordon, Model SP, Serial #21095, no fillings. Direct connected to a 75 H.P. G.E. 400 RPM Motor.
1—No. 3 Jones Pulpmaster, Late Type. Complete Drive.
1—No. 1 Jones Refiner. Direct connected to 100 H.P. d.p. B. B. 440 Volt Motor.
1—A.P.P. Rotary Centrifugal Pulp Screen, 40" Dia. x 42" Face. Serial #1274227. Like new. Capable of 40 ton groundwood pulp per day.
1—Trimbey Senior Rotary Screen.
2—Impco Rotary Pulp Screens.
3—No. 3 Impco Rotary Knotter Screens. S.S. Plates.
1—110" Pusey & Jones 2-Drum Winder. A.F. Bearings.
1—Hudson Sharpe Toilet Tissue Converting Machine. Ser. #2123. 8 Spare Mandrel Bars.
1—42" Dia. x 110" Face Pope Type Reel. Excellent Condition.
1—25" Dia. x 156" Face Sandusky Suction Couch, Bearings & Stands.
1—22" Dia. x 138" Perforated Face Sandusky Suction Couch, Bearings & Stands.
1—10-Knife Carthage Chipper with Anti-friction Bearings.
1—54" Dia. x 48" Face Valley Iron Tub Beater.
1—Dilts 53" Dia. x 60" Face—2000 lb. Iron Tub Beater. S.S. Extractor Type Hood.
1—Seybold Knife Grinder. Size G. 84" Table. Serial #4X802.
1—Sandy Hill Sulphur Burner. Complete.
2—#2 Bird Screens with Copper Vats & S.S. Plates.
1—Tugboat Annie Pulper.
1—Worthington Air Compressor, Model 5TR2, 2-Stage, Air Cooled. 5 H.P.
1—C.P. 12 x 10 Air Compressor, 100# Pressure.
1—I.R. 7 x 7 Air Compressor, 100# Pressure.
1—No. 244 Mattison 18" Core Cutting Saw—5 H.P. 3450 RPM, 3/60/220-440 volt.
1—90 H.P. Terry Turbine, Type G-4000/1000 RPM. For Paper Machine Drive. Complete.
1—No. 2 Jones Pulper. A.F. Bearings. Spare Worm.
1—36" Putman H.D. Lathe—15' Centers.
1—24" x 6' L & S Geared Head, H.D. Machine Lathe. Taper Attachment, Hollow Spindle, Motorized.
1—350 H.P. G.E. 2200 Volt, 450 RPM Motor with G.E. 350 H.P. 2200 Volt, Type CR7065-M5 Controller.
1—A.C. 75 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—A.C. 60 H.P. 3/60/220-440 Volt, 720 RPM. T.E.F.C. Type ARZX Motor.
1—G.E. 100 H.P. MG Set, 250 Volt D.C.
1—250 H.P. Ingersoll Rand Diesel Engine Generator Set—G.E. Generator, 150 KW, 480 Volts, 720 RPM.

Save over 50% on your requirements for New Jordon Fillings. S.S., Bronze & Carbon Steel.

Gear Reducers, P.I.V. Drives, Generators, B.B. Pumps, Stock Pumps, Plunger Pumps, Etc.

1000 Electric Motors from ¼ H.P. to 600 H.P. In Stock.

The above is but a small part of the inventory we carry. We can furnish you with almost anything in the line of paper mill, electrical and machine shop equipment.

Write—Wire—Phone For Your Needs

RUDERMAN MACHINERY EXCHANGE
GOUVERNEUR, NEW YORK
Telephone 333-334

TF

FOR SALE

DRYERS

22—Pusey & Jones 48" dia. 98" face

11—Pusey & Jones 48" dia. 152" face

20—Bagley & Sewall 48" dia., 80" face

8—Black Clawson chrome plated 48" x 46"

36—Sandy Hill 36" dia., 80" face with triple deck frames, gears & bearings, and rope carriers

26—Sandy Hill double deck frames, gears & bearings

24—Downingtown 42" dia., 116" face

4—Bagley & Sewall 48" dia., 86" face, complete with frames, gears

4—Pusey & Jones, 48" dia. x 124" face

11—Sandy Hill, 36" dia., 48" face

1—Bagley & Sewall creping dryer, 48" dia., 82" face

1—Bagley & Sewall creping dryer, 48" dia., 74" face

1—Beloit Yankee dryer with frames, bearings, 132" dia., 134" face

All of the above tested for 100# hydrostatic pressure. We can furnish frames, gears and bearings.

FOURDRINIERS

1—Sandy Hill 76" designed for 60 ft. wire, 5 suction boxes, suction roll if desired

1—Beloit 90" with 5 suction boxes, 65 ft. wire, breast roll. Anti-friction bearings, 18" suction couch roll.

Will rebuild either of the above to suit

PRESS SECTIONS

1st and 2nd press with press rolls, 102" face, 18" dia., top roll, brass bottom rolls, rubber covered, 7½" brass felt rolls felt stretches, etc.

CALENDER STACKS

1—9 roll Bagley & Sewall with 24" bottom roll, 18" queen roll, #6-11" intermediate rolls 16 top rolls, Water cooled bearings, flexible doctor blades, Box type frames

1—5 roll 90" face with 80" bottom roll, 3-8" intermediate rolls, 12" top roll, complete with doctors

1—Norwood Engineering Super calender stack 51" face, 5 spare rolls, complete with motor. Rotating reel, etc. This is a good one

WINDERS

1—Cameron no. 18 with 152" face drums. Rebuilt with anti-friction bearings, veriable speed D.C. Motor if desired. Will make rolls 48" or up to 72" dia.

1—Cameron No. 14 with 104" face drums. New in 1952 used 3 years. Will make rolls up to 50" dia.

1—135" Beloit two drum slitter and winder, anti-friction bearings, shear cut slitters

1—84" Bagley & Sewall 2 drum slitter and winder

1—76" Warren 2 drum slitter and winder

1—74" Moore & White 4 drum winder, R. C. drums

1—76" single drum tissue winder

REELS

1—Pope type reel, 36" dia., 84" face drum

1—Pope type reel, 42" dia., 104" face drum

1—Pope type reel, 36" dia., 128" face drum

1—Pope type reel, 48" dia., 124" face drum

1—Pope type reel, 48" dia., 152" face drum

All rebuilt and equipped with manual or hydraulic controls

BEATERS

3—Dilts Cast Iron tub Beaters, 1500# capacity with keyed bandless rolls, 61" dia., 48" face

2—Dilts Keyed bandless beaters, rolls 61" dia., 48" face.

2—Dilts rolls and stands, 50" dia., 42" face, complete with stands and tubs, 1000# capacity if desired.

1—E. D. Jones 2000# capacity with roll 53" dia., 60" face

1—Dayton Cast Iron tub, 2000# capacity beater with keyed bandless roll

1—500# Cast Iron tub beater with roll, 42" dia., 36" face

1—Continuous Breaker beater iron tub, new roll, 60" dia., 48" face, continuous extractor.

1—Valley Iron works, cast iron tub, 2000# beater, Hollow Midfeather type, bars like new. A very good rugged beater

FLY BARS & BEDPLATE

New Flybars, either keyed bandless or banded type. Heat treated, stainless or bronze. New Bedplates made to and style desired.

PULPERS

1—New 12 ft. Economy Pulper complete with junk trap

1—New 7 ft. stainless steel Economy Pulper

We can furnish any size in the best pulper for the money available

1—No. 2 Jeffery Shreader

JORDANS

1—nearly new, E. D. Jones No. 1 High speed refiner with good stainless steel fillings, drip proof motor complete with motor

1—E. D. Jones Majestic Jordan, new fillings

1—No. 2 Dillon Jordan with stainless steel fillings

2—Noble & Wood Mammoth Jr., Jordans, fillings to suit.

1—Noble & Wood Monarch Jordan, stainless steel fillings, antifriction bearings

2—Noble & Wood Pony Monarch Jordans, fillings to suit

1—Noble & Wood Pony Jordan fillings to suit

1—Emerson Pony Jordan, fillings to suit

1—Emerson no. 1 Jordan, new fillings

SUCTION ROLLS

1—20" dia., 126" face rubber covered suction press

1—18" dia., 126" face bronze shell suction press

1—20" dia., 80" face rubber covered suction press

1—18" dia., 134" face bronze suction press

1—15" dia., 90" face bronze suction press

1—22" dia., 138" face suction couch roll

1—18" dia., 114" face suction couch roll

We will rebuild and shorten any of the above to fit your machines and guarantee them to do as well as new rolls.

SAVE-ALLS

2—No. 6 Bird Savealls, cylinders 42" x 126" (new)

1—Economy Saveall, cylinders 42" x 104" (new)

1—Economy Saveall with stainless steel vat, cylinder and couch (new)

1—400 gpm Sven Pederson saveall

Any size Saveall desired either new or rebuilt.

FILTERS

1—6 ft. dia., 8 ft. face Oliver filter

PUMPS

1—Nash L 8 Nash vacuum pump, like new

1—Nash No. 6 Hytor pump, fully rebuilt

2—Nash No. 4 Hytors fully rebuilt

3—Nash No. 2 Hytor fully rebuilt

4—Nash No. 1 specials, like new

1—Frederick Spiral vacuum pump, No. 5

1—8"x6" Connorsville vacuum pump

2—Gould Centrifugal size 8 1000 GPM, 80 ft. head

1—Allis Chalmers 12x12, 2500 GPM, 50 ft. head

1—Allis Chalmers, 4 x 3, 400 GPM, 75 ft. head

1—Morris 10" x 8", 1000 GPM, 75 ft. head

1—Morris Centrifugal stock pump, 8"x6", 400 GPM

1—Gould stock pump, 12"x10", 2100 GPM

1—Shartle Bros. HMS class 8 2000 GPM, 62 ft. head

1—Worthington Centrifugal water pump, 1000 GPM, 70 ft. head

1—Frederick Centrifugal water pump, 2800 GPM, 115 ft. head

1—Cameron centrifugal water pump, 3020 GPM, 45 ft. head

2—Kingsford centrifugal stock pumps, 800-1500 GPM, 60 ft. head

1—Kingsford centrifugal stock pump, 300 GPM, 6%, 110 ft. head

1—Kingsford centrifugal stock pump, 300 GPM, 6%, 170 ft. head

Many more good pumps all makes

SCREENS

3—3A Bird 100 screens S.S. vat, cylinder & plates

3—2A Bird screens, fully rebuilt

2—No. 2 Bird screens, fully rebuilt

2—14 plate Packer type flat screens

2—10 plate Packer type flat screens

2—Shartle 16 plate flat screens

Hundreds of press rolls, calender rolls, brass felt rolls, rubber covered felt rolls, also Micarta covered rolls, all sizes.

We can shorten any roll we have to fit your machine.

The only used equipment fully rebuilt, reconditioned and guaranteed.

OSBORNE PAPER MILL EQUIPMENT CORPORATION

FULTON, NEW YORK **LY-2-4254**

J-5

For Sale

FOR SALE

158' Jeffrey Paper Roll Conveyor w/2-15 HP A.C. motors
54" Hamblett 2 knife sheeter w/layboy
44", 50", 65" Seybold cutters

Apex Printing Machinery Co. Inc.
210 Elizabeth St.
New York 12, N. Y. WOrth 6-0070
J-5

GOVERNMENT BIDS

PROPOSALS

FOR FURNISHING

Paper And Envelopes For The U. S. Government Printing Office

SEALED PROPOSALS will be received until 10 a. m. E. S. T., January 12, 1959, in the room of the Joint Committee on Printing, in the Capitol, Washington, D. C., for furnishing the paper for the public printing and binding, and blank paper and plain envelopes for the use of the Government departments and establishments in the District of Columbia, for the terms of 3 months for paper and 6 months for envelopes beginning February 1, 1959, deliveries to be f.o.b. Government Printing Office Warehouse, or warehouse siding, Washington, D. C. The proposals will be opened in the presence of and the award of contracts made by the Joint Committee on Printing to the lowest and best bidders for the interest of the Government whose bids are in conformity with the requirements of the proposals. The committee reserves the right to reject any or all bids, or to accept any bid or any part and reject the other part, if, in its opinion, such action would be in the interest of the Government.

Blank proposals containing the instructions, schedule, and specifications may be obtained by addressing Raymond Blattenberger, Public Printer, Washington, D. C.

Contracts will be entered into for supplying the quantities required, whether more or less than the estimates, as provided in paragraph 26 of the proposal for paper and paragraph 24 of the proposal for envelopes.

The approximate estimated quantities set forth in detail in the schedule comprise:

PAPER

1,955,000 pounds machine-finish book paper; 30,000 pounds machine-finish book end paper; 300,000 pounds special english-finish book paper; 80,000 pounds english-finish book paper; 10,199,000 pounds offset book paper; 170,000 pounds antique book paper; 210,000 pounds super-calendered book paper; 1,903,000 pounds coated book paper; 820,000 pounds mimeograph paper; 400,000 pounds duplicator copy paper; 860,000 pounds writing paper; 7,400,000 pounds writing paper for offset printing; 225,500 pounds map paper; 367,000 pounds manifold paper; 380,000 pounds bond paper; 1,442,000 pounds bond paper for offset printing; 9,000 pounds 100% bond paper for offset printing; 45,000 pounds translucent bond paper for offset printing; 820,000 pounds ledger paper for offset printing; 24,000 pounds 100% ledger paper for offset printing; 1,045,000 pounds index paper for offset printing; 45,000 pounds cream white index paper for offset printing; 295,000 pounds cover paper for offset printing; 25,000 pounds litho-coated cover paper; 5,000 sheets cloth-lined cover paper; 25,000 pounds manila paper; 245,000 pounds kraft paper; 485,000 sheets gummed paper; 45,000 pounds blotting paper; 8,000 pounds oiled manila tympan paper; 50,000 pounds manila tagboard; 10,000 pounds manila cardboard; 70,000 sheets railroad board; 20,000 pounds wood cardboard; 90,000 pounds tan board; 5,000 pounds wallet board; 10,000 pounds jute tag board; 3,610,000 pounds postal card paper; 10,000 pounds folding bristol; 55,000 sheets pressboard; 215,000 pounds newsboard;
240,000 {pounds binder's board.
{pounds chestnut cover board.

ENVELOPES

The approximate estimated quantities set forth in detail in the schedule comprise:

33,375,000 kraft; 13,645,000 writing, chemical wood, white and colored; 100,000 writing, white 100%; 446,000 25% bond, white; 305,000 100% bond, white; 30,000 ledger, white.

By direction of the Joint Committee on Printing.

RAYMOND BLATTENBERGER,
Public Printer.

WASHINGTON, D. C.,
December 15, 1958. J-5

Wanted

WANTED

Will buy for cash—paper co. with tax loss over past three years. Strictly confidential.

Box 58-333 care Paper Trade Journal. TF

WANTED

Surplus Printing Papers. Job Lots, Seconds, Odd Sizes, Off Colors, Side Cuts, etc.

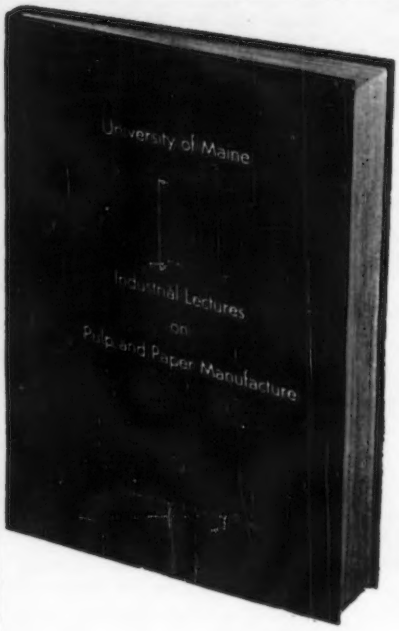
Send samples, sizes, price, etc.

Joseph G. Zifchock Pascoag, R. I.
J-19

For Sale

In view of future development on the common market, prominent European Paper Corporation, producing wide range of fine grades, wants to contact American Companies willing to grant license or patent rights for manufacture of specialities. Address Box 59-4 care Paper Trade Journal.
J-26

NEWSPAPER WANTS SAMPLES ultra-fine blotting, coated in colors; finest, heaviest available letter paper, colors, preferable with "easy-erasing" feature. Address Boxholder 573, G.C.P.O., New York 17. J-5.



Industry Specialists Authored This Practical Textbook on Pulp & Paper Production . . .

University of Maine Professors Edited It.

University of Maine-Lectures on Pulp and Paper Manufacture (Series No. 2)

Edited by Professors Lyde Jenness and John Lewis, the 375 page book publishes a series of lectures given by industry experts at the University of Maine on a complete range of pulp and paper making subjects. The *lectures* can be used as a textbook to train foremen and to orient engineers entering the field. Executives, superintendents, engineers and chemists will find this book useful as a reference. Every mill should have one or more copies. Price: $5.00.

Lockwood Trade Journal Co., Inc.
49 West 45 Street New York 36, New York

AMERICAN • ENGLISH

CLAYS

ECCO CLAYS TRADE MARK

UNIFORM • SUPERIOR • DEPENDABLE

English China Clays Sales Corporation 6 East 45th Street, New York City

KEEP UP WITH TECHNICAL ADVANCES IN YOUR FIELD... BY READING THESE NEW BOOKS!

MODERN PULP AND PAPER MAKING

Revised and enlarged 3rd Edition, edited by John B. Calkin, Consultant to the Pulp, Paper and Chemical Process Industries.

Describes and discusses all principles and practices involved in modern pulp and paper making. 558 pages. Sturdy cloth binding. $10.

PULP AND PAPER MILL INSTRUMENTATION

By E. J. Cole and M. Todd. Appendix by R. B. Lundy.

The first book ever published devoted solely to this subject, covers automatic control and measurement, and application of instruments to pulp and paper processes. 117 pages. Clothbound. $3.50.

PULP, PAPER AND BOARD MILL MAINTENANCE

Edited by John C. W. Evans

Presents complete procedures for plant maintenance on all paper and pulping operations. Well illustrated, many charts, tables and graphs are included. 126 pages. $2.50.

HANDBOOK OF ENGINEERING MATERIALS

Edited by D. F. Miner, Carnegie Institute of Technology and J. B. Seastone, Olin Mathieson Chemical Corporation.

This convenient handbook enables you to draw upon a staff of 52 specialists for any data you may need in selecting materials for any purpose in any field of engineering. 1382 pages, Illustrated, Flexible plastic binding, $17.50.

LOCKWOOD TRADE JOURNAL CO., INC.
49 West 45th Street, New York 36, N. Y.

YES, by return mail (postpaid), send me a copy of each book I have checked below.

Name ..... Title .....
Company .....
Address .....
City ..... Zone ..... State .....

☐ MODERN PULP AND PAPER MAKING $10.00
☐ PULP AND PAPER MILL INSTRUMENTATION.. $ 3.50
☐ PULP, PAPER AND BOARD MILL MAINTENANCE ..... $ 2.50
☐ HANDBOOK OF ENGINEERING MATERIALS... $17.50

Supplying Your Requirements

CUT COST

USE PULP SUBSTITUTES

THOMAS PAPER STOCK COMPANY
1500 No. Hooker Street • Chicago 22, Ill.

ADVERTISERS

Adell Chemical Co. ..... —
Albany Felt Co. ..... —
Allis-Chalmers Mfg. Co. ..... —
Aluminum Co. of America ..... —
American Bitumuls & Asphalt Co. ..... —
American Cyanimid Co., Paper Chemical Dept. ..... —
American Cyanamid Co., Dyes Dept. ..... —
American Cyanamid Co., Organic Chem. Div. ..... —
American Cyanamid Co., Pigments Dept. ..... —
American Paper & Pulp Co. Inc. ..... —
American Potash & Chem. Corp. ..... —
American Steel & Wire Co. .. —
Ames Company ..... —
Anglo Paper Products Ltd. .. —
Annin Company ..... —
Antara Chemicals, Sales Div. Gen. Aniline & Film Corp. .. —
Apmew, Inc. 59
Appleton Machine Co., The ... —
Appleton Wire Works ..... —
Appleton Wood Products Co. . —
Armco Drainage & Metal Products ..... —
Armco Steel Corp. ..... —
Armstrong Machine Works .. —
Arnold Hoffman & Co. ..... —
Asten-Hill Mfg. Co. ..... —

Babcock & Wilcox Co. ..... —
Bahr Brothers Mfg. Co. 50
Bailey Meter Co. ..... —
Bauer Bros. Co. ..... —
Becco Chem. Div., Food Mchy. Corp. ..... —
Beloit Iron Works Co. ..... 32 & 33
Bird Machine Co. 17
Bixby, R. W., Inc. ..... —
Black-Clawson Co. 10
Bolton & Sons 3
Borden Co. ..... —
Bowsher Co., N. P. 54
Brandon Sales, Inc. ..... —
Broughton, A. E. & Co. ..... —
Brown Company ..... —
Buckeye Cellulose Corp. ..... —
Buffalo Forge Co. ..... —
Buffalo Pumps, Inc. ..... —

Cady, E. J., & Co. 49
Cambridge Instrument Co. .... —
Cameron Machine Co. ..... —
Capitol Products Corp., Read Standard Div. ..... —
Central National Corp. 51
Central Soya Co, Chemurgy Div. ..... —
Chicago Bridge & Iron Co. .. —
Ciba Company ..... —
Cities Service Oil Co. ..... —
Clark-Aiken Company ..... —
Classified Advertising 52
Clearing House 52
Cleveland Crane & Engrg. Co.. —
Colonial Plastics Mfg. Co. .... —
Columbia-Geneva Steel Div., U. S. Steel Corp. ..... —
Columbia-Southern Chem. Corp. Sub of Pittsburgh Plate Glass Co. ..... —
Combustion Engrg. Co. ..... —
Corn Products Sales Co. ..... —
Crane Co. ..... —

Davis, Frank H., Co., Inc. ... —
DeZurick Corporation ..... —
Dewey & Almy Chem. Co. ..... —
Diamond Alkali Co. ..... —
Dicalite Div., Great Lakes Carbon Corp. ..... —
Dierks Paper Co. ..... —
Dilts Machine Works 10
Dodge Mfg. Co. ..... —
Dorr-Oliver ..... 28 & 29
Dow Chemical Co. ..... 24 & 25
Dowell, Inc. ..... —
Draper Bros. Co. ..... —
Dryden Paper Co., Ltd. ..... —
du Pont, E. I., de Nemours & Co., Dyestuffs Dept. ..... —
du Pont, E. I., de Nemours & Co., Electrochemical Dept. .. —
du Pont, E. I., de Nemours & Co., Grasselli Dept. ..... —

Eaton Manufacturing Co. ..... —
Ebasco Services, Inc. ..... —
Egan Frank W., & Co. ..... —
Elixman Paper Core Co. ..... —
English China Clays Sales Corp. 57

FabriValve Company ..... —
Fairbanks Morse & Co. ..... —
Falk Corporation ..... —
Farrel-Birmingham Co., Inc... —
Fibrecast Company ..... —
Fife Manufacturing Co. ..... —
Fitchburg Screen Plate Co. .... —
Foxboro Co. ..... —
Fraser Companies, Ltd ..... —
Frederick Iron & Steel Co. ... —
Freeport Sulphur Co. ..... —

Garlock Packing Co. 4
Gaspesia Sulphite Co. Ltd. .. —
Gates Rubber Company ..... —
Geigy Chemicals Corp., Geigy Dyestuffs Div. ..... —
General Dyestuffs Co. ..... —
General Electric Co. .. .. —
General Tire & Rubber Co. 9
Gibbs-Brower Co. 52
Gilbert & Nash Co. ..... —
Glidden Company ..... —
Gottesman & Co. ..... —
Grace, W. R., & Co., Dewey & Almy Chem. Div. ..... —
Graton & Knight Co. ..... —
Graver Tank & Mfg. Co. .... —
Grinnell Co., The ..... —
Gruendler Crusher & Pulv. Co. —
Gulf Oil Corporation ..... —
Gurley W. & L. E. ..... —

Hamblet Machine Co. ..... —
Harbison-Walker Refractories .. —
Hendrick Mfg. Co. ..... —
Hercules Powder Co. ..... —
Hills-McCanna Co. ..... —
Hooker Electrochemical Co. .. —
Huber, J. M. Corp. ..... —
Hudson Sharp Machine Co. .. —
Hungerford & Terry, Inc. ..... —
Huyck, F. C. & Sons ..... —

Improved Machinery, Inc. Back Cover
International Business Machines ..... —
International Paper Co. ..... —

Jenkins Brothers ..... —
Johns-Manville Corp. ..... —
Johnson Corp., The ..... —
Johnson, Alvin H., & Co. 49
Jones, E. D., Corp. ..... —
Jones & Laughlin Steel Corp. 19 & 22

Kalamazoo Tank & Silo Co. ... —
Kidder Press Co. ..... —
Knox Woolen Co. 50
Koppers Company ..... —

Langston, Samuel M., Co. .. —
Link Belt Co. ..... —
Lockport Felt Co. ..... —
Lockwood Greene Engineers .. —
Lodding Engineering Co. ..... —
L. O. F. Glass Fibers Co. ..... —
Lukon, Inc. ..... —
Lunkenheimer Co. ..... —
Lyddon & Co. ..... —

Magnus Metal Corp. ..... —
Main, Charles T., Inc. 48
Manchester Machine Co. ..... —
Marathon—A division of American Can ..... —
Marathon Electric Mfg. Corp. —
Mead Pulp Sales, Inc. ..... —
Meincke, A. M. & Son ..... —
Meltzer, H., & Son 18
Merrick Scale Co. ..... —
Mixing Equipment Co. ..... —
Montague Machine Co. ..... —
Moore & White Co. ....Front Cover
Morden Machines Co. ..... —
Mt. Vernon Mills Inc. ..... —
Murray, D. J., Mfg. Co. ..... —

Nash Engineering Co. ..... —
National Lead Co., Magnus Metal Div. ..... —
National Starch Products, Inc. ..... —
National Tube Div., U. S. Steel Corp. ..... —
New Jersey Zinc Co. ..... —
Nichols Eng. & Research Corp. ..... —
Noble & Wood Mch. Co. .... —
Nopco Chemical Co. ..... —
Northeastern Paper Sales ..... —
Norton Co. ..... —

Oakite Products Inc. 8
Ohio Injector Co. 2
Olin Mathieson Chem. Corp. .. —
Osborne Paper Mill Equip. Corp. 55

Parsons & Whittemore ..... —
Patton Mfg. Co. ..... —
Perkins, B. F., & Sons, Inc. .. —
Perkins Goodwin Co. ..... —
Personnel Service Associates .. —
Pioneer Paper Stock Co. ..... —
Pittsburgh Piping & Equip. .. —
Poirier Control Co. ..... —
Potdevin Machine Co. ..... —
Powell Valves ..... —
Price & Pierce, Ltd. ..... —

Railway Supply & Mfg. Co. ... —
Raymond, Chas. P. Service, Inc. —
Read Standard Div. of Capitol Products Corp. ..... —
Ready Power Co. ..... —
Record Fdy. & Mch. Co. 50
Red Ray Mfg. Co. ..... —
Rice Barton Corp. ..... —
Riedel, Gus & Son ..... —
Riegel Paper Corp. 31
Rohm & Haas Co. ..... —
Ronningen-Petter Co. ..... —
Roosevelt Paper Co. ..... —
Roots-Connersville Blower Div. Dresser Industries ..... —
Ross, J. J., Co. 53
Ross-Midwest Fulton Co. ..... —
Ross Paper Machinery Co. .... —
Ruderman Mach. Exchange ... 54
Rust Engineering Co. 48
Ryerson, Jos. T., & Son ..... —

Sandoz, Inc. ..... —
Sandy Hill Iron & Brass Works ..... —
Scapa Dyers Inc. ..... —
Seaboard Air Line R. R. Co. . —
Shartle Div., Black-Clawson Co. 10
Shawinigan Resins Corp. ..... —
Sheffield Corp. ..... —
Shell Chemical Corp. ..... —
Shuler & Benninghofen ..... —
Shy, C. D., & Company 48
Signode Steel Strapping Co. .. —
Simplex Wire & Cable Co. ... —
Sinclair Company ..... —
Sirrine, J. E., Co. ..... —
Smidth, F. L., & Co. ..... —
Soderhamn Mch. Mfg. Co. .... —
Sonoco Products Co. ..... —
Southworth Machine Co. .... —
Spraying Systems Co. ..... —
Sprout Waldron & Co. ..... —
Stadler Hurter & Co. 48
Staley Mfg. Company ..... —
Stanley Steel Strapping ..... —
Stebbins Engrg., Co. ..... —
Stein, Hall & Co. ..... —
Stone & Webster Engrg. Corp. —
Stowe-Woodward, Inc. ..... —
St. Regis Paper Co. ..... —
Sunday, George M., Assoc. ... 52
Swenson Evaporator Co. ..... —

Taylor Instrument Co.'s .....6 & 7
Taylor Stiles & Co. ..... —
Tennessee Coal & Iron Co. ..... —
Tennessee Corp. ..... —
Testing Machines ..... —
Texas Co. ..... —
Texas Gulf Sulphur Co. ..... —
Thiele Kaolin Co. ..... —
Thomas Paper Stock Co. 57
Thurso Pulp & Paper Co. .... —
Titanium Pigment Corp. .... —
Toledo Scale Corp. ..... —
Torrington Co. ..... —
Towmotor Corp. ..... —
Trent Tube Co. ..... —
Turner Halsey Co. ..... —

United Carbon Co. Inc. ..... —
United Engrg. & Fdy. Co. .... —
United Paper Mchy. Corp. .. —
U. S. Industrial Chem. Co. .. Div. of National Distillers & Chem. Corp. ..... —
U. S. Rubber Company ..... —
United States Steel Export .... —
United States Steel Supply Co. ..... —
U. S. Steel Corp. ..... —

Valley Iron Works ..... —
Vanderbilt, R. T., Co. ..... —
Virginia Smelting Co. ..... —

Waldron, John Corp. ..... —
Walworth Co. ..... —
Weber, H. G., Company ..... —
West End Chemical Div. Stauffer Chem. Co. ..... —
Westvaco Chlor-Alkali Div., Food Mchy. & Chem. Corp. ..... —
West Virginia Pulp & Paper Co. ..... —
Weyerhauser Timber Co. 2
Whiting Corp. ..... —
Williams Apparatus Co. ..... —
Williams-Gray Co. ..... —
Wisconsin Wire Works ..... —
Woodpulp, Inc. ..... —
Wood's, T. B., Sons Inc. 50
Wyandotte Chem. Corp. ..... —
Wyatt Metal & Boiler Works . —

Yarnall-Waring Co. ..... —

While we strive for accuracy in preparing the above index which is purely a service to our readers, we cannot be responsible for errors.

PAPER TRADE JOURNAL BUSINESS STAFF

New York 36, N. Y. 49 W. 45th St. Plaza 7-2370

Arthur E. Gordon, Business Mgr.

Frederick B. Grosse, Production Mgr.

Francis J. Gordon — Alrick Man

CHICAGO 3, ILL.: H. K. Vinton
Room 1020, 79 W. Monroe St. CEntral 6-2784

PITTSBURGH 11, PA.: H. L. Poulton
610 Pennridge Road. HEmlock 1-1571

MIAMI, FLA.: Hal Moore
279 N. E. 79th Street

Rep. by McDonald-Thompson Co. in:

LOS ANGELES 5, CAL.: R. Teeter
3727 W. Sixth St., DUnkirk 7-5391

SAN FRANCISCO, CAL.: Cal Wood
625 Market St. YUkon 6-0647

DENVER 2, COLO.: Bob Heidersbach
222 Colorado Nat'l Bank Bldg. KEystone 4-4669

TULSA 4, OKLA.: T. R. Trautmann
2010 S. Utica. Riverside 3-1981

PORTLAND 4, ORE.: Fred Goetz
404 Times Bldg. CA 2-5146

HOUSTON 6, TEXAS: F. Vickrey
Room 214, 3217 Montrose Blvd. JAckson 9-6711

SEATTLE 4, WASH.: H. Abney
1008 Western Ave. MA 3-3766

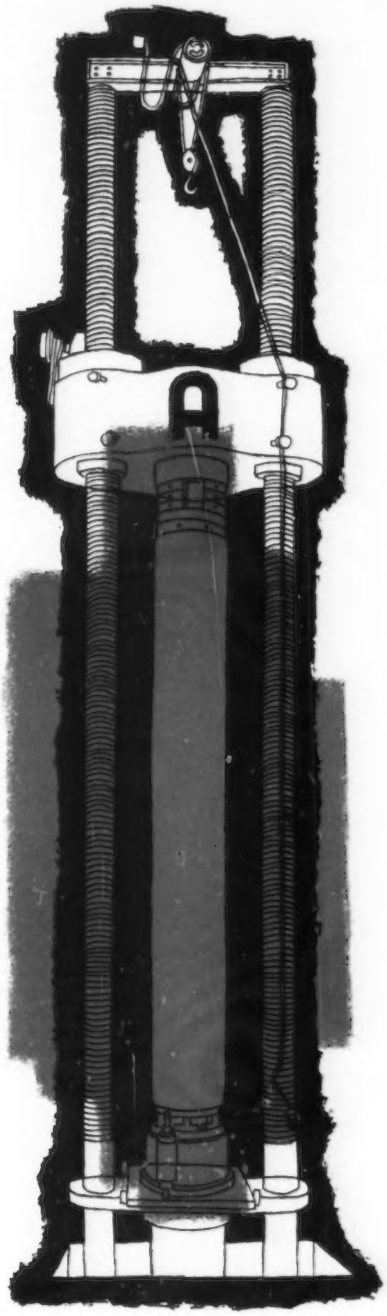
Foreign Representatives

GERMANY: Herbert Morgenbesser
Kohlgarten 3, Hamburg—F. U. Phone: 59-82-03

UNITED KINGDOM: H. R. Vaughan
Publishing & Distributing Co., Ltd.
177 Regent St., London W 1, England Regent 6534

HUGHES PRINTING CO.
EAST STROUDSBURG, PA.

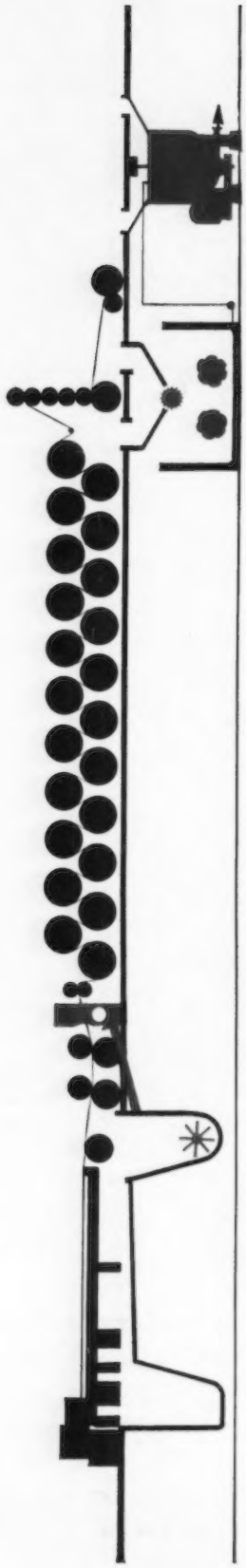
This Appleton roll press—the largest in the world—has 3500 ton hydraulic capacity, can handle rolls with over 300" face.



HERE'S A CHALLENGE AND A PROMISE: Appleton filled rolls will improve the performance of *any* calender you have! In the finish they produce and the tonnage they handle, Appleton filled supercalender and embossing rolls will turn in more profitable performance for you. New rolls built precisely to fill your needs . . . your present rolls refilled. Special applications given immediate, expert attention.

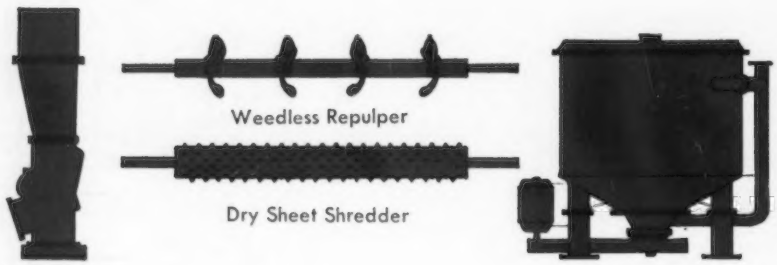
APPLETON MACHINE COMPANY

APPLETON, WISCONSIN



IMPCO OFFERS COMPLETE *BROKE PULPING* AT ALL POSITIONS ON YOUR PAPER MACHINE

Over two thousand Impco Agitators for every conceivable mill requirement, both before and after the paper machine, are in successful operation. As a pioneer in the designing of such equipment, Impco also regularly builds broke handling devices for various positions under the paper machine. Consequently, such units as Couch Pit Agitators, Sheet and Roped Press Broke Shredders, Dry Sheet Shredders, Solvo Pulpers and Defiberers have been developed. As a result of this mill proven experience, Impco can provide you with either a complete broke handling system or individual components.



Press Broke Shredder

Solvo Pulper

IMPCO® IMPROVED MACHINERY INC.
NASHUA, NEW HAMPSHIRE

In Canada, Sherbrooke Machineries Limited, Sherbrooke, Quebec